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THE ORNITHOLOGY

OF

FRANCIS WILLUGHBY

OF

Middleton in the County of Warwick Esq;
Fellow of the ROYAL SOCIETY.

In Three Books:

Wherein All the

BIRDS

HITHERTO KNOWN,

Being reduced into a METHOD suitable to their Natures,
are accurately described.

The Descriptions illustrated by most elegant Figures, nearly resembling
the live BIRDS, Engraven in LXXVIII Copper Plates.

Translated into English, and enlarged with many Additions
throughout the whole WORK.

To which are added,

Three Considerable DISCOURSES,

I. Of the Art of FOWLING: With a Description
of several NETS in two large Copper Plates.

II. Of the Ordering of SINGING BIRDS.

III. Of FALCONRY.

BY

JOHN RAY, Fellow of the ROYAL SOCIETY.

Psalms 104. 24.

*How manifold are thy works, O Lord? In wisdom hast thou made them all: The Earth is
full of thy riches.*

LONDON:

Printed by A.C. for John Martyn, Printer to the Royal Society, at the Bell in
St. Pauls Church-Yard, MDCLXXVIII.

THE PREFACE.



Ho the Author of this History of Birds was, and why after so many Books of this Subject already published we should attempt to set it forth, the Reader may perchance desire some information and account, which we shall endeavour briefly to give him. As for the Author the Title-page presents him with his Name and Country. He was the only Son of Sir Francis Willughby Knight, descended of two very ancient Families, both *Willughbys*, the one Honourable, viz. that of *Eresby* in *Lincolnshire*, by the Fathers side; the other Worshipful, viz. that of *Willughby* on the *Wolds* in *Nottinghamshire*, by the Mothers. His Mother was the Lady *Cassandra*, Daughter to the Right Honourable the Earl of *London-Derry*. He was moreover endowed with excellent gifts and abilities both of body and mind, and blessed with a fair Estate. Howbeit, as he did duly prize these advantages of Birth, Estate, and Parts, so did he not content himself therewith, or value himself thereby, but laboured after what might render him more deservedly honourable, and more truly be called his own, as being obtained by the concurrence at least of his endeavours. First then, as God had given him a quick Apprehension, piercing Wit, and sound Judgment, so by his great industry and constant use of these gifts he did highly improve and advance them. He was from his Childhood addicted to study, and ever since he came to the use of Reason so great a husband of his time, as not willingly to lose or let slip unoccupied the least fragment of it, detesting no Vice more than Idleness, which he look'd upon as the Parent and Nurse of almost all others. Nay, so excessive was he in the prosecution of his studies and other employments without any intermission or diversion, that most of his Friends were of opinion he did much weaken his body and impair his health by his unceasing labours and perpetual intention of mind upon business. However that be, hence it came to pass that he attained very good skill in all parts of learning, and particularly got a deep insight into those Sciences which are most abstruse and impervious to Vulgar Capacities, I mean the most subtil parts of the Mathematics. Of his skill in Natural Philosophy, chiefly the History of Animals, [Birds, Beasts, Fishes, and Insects,] I shall say no more at present, but that it hath not yet been my hap to meet with any man either in *England* or beyond Seas of so general and comprehensive knowledge therein.

But secondly, what rendred him most commendable was his eminent Vertue and Goodness. I cannot say that ever I observed such a confluence of excellent qualities in one Person. For 1. Notwithstanding the forementioned advantages, which are wont to puff up mens minds with pride, he was so truly humble, that I have not known any man of the meanest fortune or birth exceed him in that vertue. He despised no man

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for his Poverty or mean Parentage; honoured all men, was affable to the meanest, not preferring himself before others, but condescending to them of low degree. 2. He was so resolutely sober and temperate, that neither the importunity of company or pleasure of sense could ever tempt him to excess. 3. Of that exemplary chastity and purity, that his life condemns the dissoluteness and corrupt practices of the present Age, and demonstrates the possibility of restraining and regulating those motions and desires, which of all others are wont to be most violent and inordinate. 4. So scrupulously just and righteous, that he had rather a great deal suffer wrong than do any. 5. So true to his word and promise, that a man might safely venture his Estate and Life too upon it: His word being, as an honest mans is said to be, as good as his Bond. 6. So faithful and constant to his Friend in all conditions, as well adverse as prosperous, that one might be secure of him, and confident of his help and assistance, whatever distress or calamity might befall one: He never deserting any man only because fortune frowned upon him, as the common sort of Friends are wont to do. 7. He was of so diffuse and comprehensive Charity, that he could heartily affect and embrace good men of all persuasions; Good men, I say, to exclude such opinions as are destructive of, or inconsistent with true goodness.

To these I might add his Patience and Submission to the Divine Will, which did eminently appear in the time of his sickness, when he professed himself contented to leave the world, if it pleased God to have it so, though then in the height of his strength and parts, and in the hot pursuit of useful studies and designs, and in such circumstances, as to his private affairs and concerns in the world, as rendered some continuance of life very desirable to him, and would have tempted a man of ordinary virtue to express some anger and discontent at the sentence and expectation of death. And lastly, his due fear and reverence of the Deity, deep sense of his goodness, and thankfulness for the same, sincere Piety in all his carriage toward him, and great abhorrence of whatever tended to his dishonour.

Thus much, though less pertinent to the Argument of this present Work, I thought fit to premise concerning his Virtues, partly to do him right by procuring him the honour due to his memory: And partly to provoke young Gentlemen of this Nation, by the proposal of so illustrious an example of their own Rank, to prosecute the study of ingenuous Literature, and aspire to true honour by the constant exercise of Virtue.

I proceed now to give an account of this Work, and acquaint the Reader with the occasion of his attempting it, and what progress he made in it. Observing in this busy and inquisitive Age the History of Animals alone to have been in a great measure neglected by English men (for that since Turner and Mouffet none that I know of hath performed any thing therein worthy of commendation) he made the study thereof his Province, applying himself with all diligence to the cultivating and illustrating of it. Which that he might the more effectually do, he not only read what had been written by others, but did himself accurately describe all the Animals he could find or procure either in England or beyond the Seas, making a Voyage into foreign Countries chiefly for that purpose, to search out, view and describe the several Species of Nature. And though he was not

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long abroad, yet travelled he over a great part of France, Spain, Italy, Germany, and the Low Countries. In all which places he was so inquisitive and successful, that not many sorts of Animals described by others escaped his diligence. For my part I know no man who hath seen more Species, been more exact in noting their differences, and inventing Characteristic Marks whereby they may be certainly distinguished; or more curious in dissecting them, and observing the make and constitution of their parts as well internal as external. Howbeit I do not deny but some have been more accurate in anatomizing one or two particular Animals. The reason of this his diligence was, because he observed that some of the descriptions of former Writers of this kind, either by reason of their brevity, or because they contained only general notes, were very obscure, and gave occasion to many errors and mistakes, but chiefly unnecessary multiplications of Species; the Readers often mistaking several descriptions of the same Animal, which they meet with in divers Authors, by reason of their generality and obscurity, for so many descriptions of several Animals. Now that he might clear up all these obscurities, and render the knowledge and distinction of Species facile to all that should come after, he bent his endeavours mainly to find out (as I before intimated) certain Characteristic notes of each kind. But if in any kind no singular mark occurred whereby it might be certainly distinguished from all others, he did minutely and exactly describe all its parts, that at least a Collection of many accidents, which all together could not be found in any Species else of the same kind, might serve for a Characteristic: That the Reader should not by a general and ambiguous description be left in suspense, or incur the danger of error. But because a prolix and operose description is tedious to most Readers, and to the unattentive seems rather to obscure than illustrate the thing described, to relieve and gratify such, besides the description he often adds some short notes, by which the Animal described may be distinguished from others of the same kind like to it, and wherewith it is in danger to be confounded. Now though I cannot but commend his diligence, yet I must confess that in describing the colours of each single feather he sometimes seems to me to be too scrupulous and particular, partly because Nature doth not in all Individuals, (perhaps not in any two) observe exactly the same spots or strokes, partly because it is very difficult to word descriptions of this sort as to render them intelligible: Yet dared I not to omit or alter any thing.

But to proceed, our Author having made so good progress in this Work, that few of our European Animals described by others had escaped his view; that he might (as far as in him lay) perfect the History of Animals, he designed a Voyage into the New World, but lived not to undertake it. For about the beginning of June, in the year 1672, being seized with a Pleurisy, which terminated in that kind of Fever Physicians call Catarrhalis within less than a month after he took his bed, on the third of July in the thirty seventh year of his Age he departed this life to the immense grief of his Friends and all good men that knew him, and the great loss of the Commonwealth in general.

Viewing his Manuscripts after his Death, I found the several Animals in every kind both Birds, Beasts, Fishes, and Insects digested into a

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Method of his own contriving, but few of their Descriptions and Histories so full and perfect as he intended them; Which he was so sensible of, that when I asked him upon his death-bed, whether it was his pleasure they should be published, he answered, that he did not desire it, nor thought them so considerable as to deserve it, or somewhat to that purpose, for the very words I do not well remember, though he confessed there were in them some new and pretty observations about Insects. But, considering that the publication of them might conduce somewhat 1. To the illustration of Gods glory, by exciting men to take notice of, and admire his infinite power and wisdom displaying themselves in the Creation of so many *Species* of Animals; And 2. To the assistance and ease of those who addict themselves to this most pleasant, and no less useful part of Philosophy; And 3. Also to the honour of our Nation, in making it appear that no part of real knowledge is wholly balked and neglected by us, (he not contradicting) I resolved to publish them, and first took in hand the *Ornithology*.

As for the scope and design of this undertaking, it was neither the Authors, nor is it my intention to write Pandects of Birds, which should comprise whatever had been before written of them by others, whether true, false or dubious, that having already been abundantly performed by *Gesner* and *Aldrovandus*, nor to contract and Epitomize their large and bulky Volumes; lest we should tempt Students to gratify their sloth so far as to take up with such Epitomes, and neglect the reading of the Authors themselves at large, which would be much more satisfactory and improving: and besides, this were but *actum agere*, such Epitomes being already made by *Johnston*: But our main design was to illustrate the History of Birds, which is (as we said before of Animals in general) in many particulars confused and obscure, by so accurately describing each kind, and observing their Characteristic and distinctive notes, that the Reader might be sure of our meaning, and upon comparing any Bird with our description not fail of discerning whether it be the described or no. Nor will it be difficult to find out any unknown Bird that shall be offered: For comparing it with the Tables first, the Characteristic notes of the *genus's* from the highest or first downward will easily guide him to the lowest *genus*; among the *Species* whereof, being not many, by comparing it also with the several descriptions the Bird may soon be found. This then being our design, that we might surely effect it, we did not as some before us have done, only transcribe other mens descriptions, but we our selves did carefully describe each Bird from the view and inspection of it lying before us. That this diligence was not superfluous or without effect will appear in that we have thereby cleared many difficulties, and rectified many mistakes in the Writings of *Gesner* and *Aldrovandus*. If it be asked, what caused these great Authors to mistake? I answer, short and general descriptions of Birds of the same *Species* under different Titles, either sent them by their Correspondents in several parts, or found in Books. Hence their mistakes are especially in the multiplying of *Species*, and making two or three sorts of one. This is easy to observe in reading of their Works. For their own descriptions of such Birds as themselves saw, are for the most very accurate and full, but those communicated by others are of a different stamp,

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stamp, as being composed by men not well versed in describing of Animals, containing only a few general and ambiguous notes, so that one description will fit divers *Species*, or two or three descriptions suite one and the same; which must needs occasion such mistakes as we mentioned of repeating the same Bird two or three times for different kinds, under divers Titles. Many such errors occur in *Aldrovand*, which the Reader shall find noted in this Work, and some also in *Gesner*, notwithstanding his great skill and circumspection. Yet do we not pretend to have discovered and rectified all the mistakes and errors in these Authors: There remain yet sundry descriptions of this nature, which we are doubtful of whether they be of Birds specifically distinct or no: Nor do we see any means left to resolve our selves, unless perchance by travelling to those places whence such descriptions and titles were sent, where we might probably learn what Birds the Inhabitants understand by those names.

Having acquainted the Reader with our principal aim in this Work, which was to give certain Characteristic notes of the several kinds, accurately to describe each *Species*; and to reduce all to their proper *Classes* or *Genera*: We shall further add, that we have wholly omitted what we find in other Authors concerning *Homonymous* and *Synonymous* words, or the divers names of Birds, *Hieroglyphics*, *Emblems*, *Morals*, *Fables*, *Prefaces*, or ought else appertaining to *Divinity*, *Ethics*, *Grammar*, or any sort of Humane Learning: And present him only with what properly relates to their Natural History. Neither have we scraped together whatever of this nature is any where extant, but have used choice, and inserted only such particulars as our selves can warrant upon our own knowledge and experience, or whereof we have assurance by the testimony of good Authors, or sufficient Witnesses. And, because what is streight doth both manifest it self, and also discover what is crooked, we contented our selves to put down only what we approve, not thinking it necessary to spend time in confusing the contrary error.

Concerning the names of Birds we did not much trouble our selves, there having been disputing enough about them long ago; but have for the most part followed *Gesner* and *Aldrovandus*, being unwilling to disturb what is settled, or dispossess Names, that may for their use now plead prescription. For to what purpose is it eternally to wrangle about things, which certainly to determine is either absolutely impossible, or next door to it? Especially seeing if by immense labour it might at last be found out, by what Names every *Species* was known to the Ancients, the advantage that would thence accrue would not countervail the pains. About the Phrase and Style we were not very solicitous, taking greater care to render the Sense perspicuous than the Language ornate.

But because Mr. *Willughby* (though sparing neither pains nor cost) could not procure, and consequently did not describe all sorts of Birds; to perfect the Work, I have added the Descriptions and Histories of those that were wanting, out of *Gesner*, *Aldrovandus*, *Bellonius*, *Marggravius*, *Clusius*, *Hernandez*, *Bontius*, *Wormius*, and *Piso*; disposing each kind, as near as I could, in its proper place.

Now

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Now because elegant and accurate Figures do much illustrate and facilitate the understanding of Descriptions, in order to the Engraving such Figures for this Work, Mr. Willughby made a Collection of as many Pictures drawn in colours by the life as he could procure. First, He purchased of one *Leonard Baltner*, a Fisherman of *Strasburgh*, a Volume containing the Pictures of all the Water-fowl frequenting the *Rhene* near that City, as also all the Fish and Water-Insects found there, drawn with great curiosity and exactness by an excellent hand. The which Fowl, Fishes, and Insects the said *Baltner* had himself taken, described, and at his own proper costs and charges caused to be drawn. Which curiosity is much to be admired and commended in a Person of his Condition and Education. For my part, I must needs acknowledge that I have received much light and information from the Work of this poor man, and have been thereby enabled to clear many difficulties, and rectify some mistakes in *Gesner*. Secondly, At *Nuremberg* in *Germany* he bought a large Volume of Pictures of Birds drawn in colours. Thirdly, He caused divers Species, as well seen in *England* as beyond the Seas, to be drawn by good Artists. Besides what he left, the deservedly famous Sir *Thomas Brown*, Professor of Physick in the City of *Norwich*, frankly communicated the Draughts of several rare Birds, with some brief notes and descriptions of them. Out of these, and the Printed Figures of *Albrousius*, and *Pet. Olini*, an Italian Author, we culled out those we thought most natural, and resembling the life, for the Gravers to imitate, adding also all but one or two of *Marggravius's*, and some out of *Cladius* his Exotics, *Piso* his Natural History of the *West Indies*, and *Bontius* his of the *East*.

The Gravers we employed, though they were very good Workmen, yet in many Sculptures they have not satisfied me. For I being at a great distance from *London*, and all advices and directions necessarily passing by Letter, sometimes through haste mistook in my directions, sometimes through weariness and impatience of long Writing sent not so clear and full instructions as was requisite; and they as often neglected their instructions, or mistook my meaning. Notwithstanding the Figures, such as they are, take them all together, they are the best and truest, that is, most like the live Birds, of any hitherto engraven in Brass.

It is requisite now that we inform the Reader what compendious ways we sought to avoid unnecessary expences in graving of Figures. 1. Of the same Species of Bird when more Figures than one occurred either in divers Authors, or our own Papers, or both, we caused only one, which we judged to be the best to be engraven. 2. We have for the most part contented our selves with the figure of one Sex only, and that the Male. 3. We have omitted all such dubious *Icons* as we knew not whether they were of true birds or not, or could not certainly determine of what Species they were. 4. Of such as differ only in bigness, or if otherwise in such accidents as cannot be expressed in Sculpture, we have given only the Figure of the greater. Of this kind are the greater and lesser *Cuckew*, the common *Snipe*, and *Jack-Snipe*, or *Judcock*. And yet some Birds we have caused to be graven twice when the first time the Gravers mist their aim, and shot too wide of their mark: Such are the *red-leg'd Partridge*, the

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The common *Swallow*, the *Swift*, the common *Blackbird*, the *House-Dove*, the *Royston Crow*, the *Witwall*, and the *Dottrel*. I might add hereto the *Canada Goose* in the seventieth Plate, for I now persuade myself that the Bird graven in Plate 71. is the same with it. The *Sheldrake* was through mistake twice figured in Plates 70. and 71. so was the *Auk* or *Razor-bill* in Plates 64. and 65. The figures of the *Rock Onzel*, *Bittern*, and *Stone-Cuckew* first graven, though they were passable enough, yet having afterwards gotten very exact Figures of those Birds, we caused them also to be engraven.

The whole Work we have divided into three Books. In the first we treat of Birds in general; in the second of Land-fowl; in the third of Water-Fowl. The second Book we have divided into two parts: The first whereof contains Birds of crooked Beak and Talons; The second, such whose Bills and Claws are more straight. The third Book is tripartite: The first part takes in all Birds that wade in the waters, or frequent watery places, but swim not; The second, such as are of a middle nature between swimmers and waders, or rather that partake of both kinds, some whereof are cloven-footed, and yet swim; others whole-footed, but yet very long-leg'd like the waders: The third is of whole-footed, or fin-toed Birds, that swim in the water.

As for fabulous Birds, such as are confessedly so, viz. *Phoenixes*, *Griffins*, *Harpyes*, *Ruk*, and the like, I have omitted them, as being no part of our subject, and all that can be said of them having been more than once written already. I have also omitted some that I only suspected for fictitious, as the *Scythian Bird*, the *Aquila Heteropus*, &c. Yet because I would not rely too much upon my own judgment, I have put in the Appendix the descriptions of some of that nature out of *Hernandez*, which I refer to the Readers censure.

It remains that I make a grateful mention of such of our learned and worthy Friends, as have given us any considerable information or assistance; as well to do them right, as to acquaint the Reader whom we mean by some names recorded in this Work. Those were Sir *Thomas Brown* of *Norwich* before remembred: *Francis Jessop Esq;* of *Broom-hall* in *Sheffield Parish*, *Yorkshire*, who sent us the Descriptions and Cakes of many rare Birds, and discovered and gave us notice of many Species thereabout, which we knew not before to be native of *England*: Sir *Philip Skippon* of *Wrentham* near *Bliborough* in the County of *Suffolk*, Knight, who communicated the Pictures of several Birds we wanted: And Mr. *Ralph Johnson* of *Brignall* near *Greta Bridge* in *Yorkshire*, a Person of singular skill in *Zoology*, especially the *History of Birds*, who besides the Descriptions and Pictures of divers uncommon, and some undescribed both Land and Water-fowl, communicated to us his Method of Birds, whereby we were in some particulars informed, in many others confirmed, his judgment concurring with ours in the divisions and Characteristic notes of the Genera.

Thus much may suffice to have spoken by way of Preface of the Work in general.

It may now be expected that I give some account of the *English Translation*. But I have not much to say concerning it; I shall only acquaint the Reader what I have therein amended, and what I have thereto added.

First, The errors and mistakes which since this Work was published I have discovered, and in the Translation noted or corrected are these. The first mistake is in the placing of the *Toucan*, falsely called the *Brazilian Pie*, among the Birds of the *Pie-kind*: It properly belonging to the *Woodpecker Tribe*, as

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having a like disposition of Toes, two standing forward, and two backward, and in like manner hewing a hole in a Tree to build its Nest in. This I did before suspect, but am now assured of by an exact description of this Bird I met with in *Jo. Faber* his Explications of some *American Animals* of *Reechius*. 2. In making *Bellonius* his greater red-leg'd Partridge or Greek Partridge to be a different kind from the common red-leg'd Partridge, which upon diligent comparing the Descriptions and Histories, I find to be the same with it. 3. In putting down the *Fringilla spuria cum calcar* *Alande*, Pag. 188. for a distinct Species from the precedent Bird, entitled *Montifringilla major*, or the great Brambling. This mistake was committed by meer accident, and forgetfulness. 4. In the conjecture that the *Larus Maximus*, described pag. 261. was the *Skua* of *Hoierus*, whereas I find that our *Catarractes*, described pag. 265. is his *Skua*, the descriptions exactly agreeing. 5. In putting down the Bird entitled, *Anas fera capite subrufo minor* for a distinct Species, whereas I am now assured by our Fowlers, that it is the Hen Golden-eye. I do also suspect the *Anas fera capite subrufo major*, described for a distinct kind in pag. 282. to have been no other than a Young Cock-Golden-eye, that had not moulted his Chicken-feathers. 6. In placing the *Anas fera fusca* or *Pochard*. And 7. the *Havelda* of *Wormius* among the River or *Plash*-Ducks, whereas they belong to the Sea-kind. 8. In making the Bird described, pag. 289. under the title of *Phascas fortasse Gesnero*, to be a distinct Species, which I find by comparing the Birds themselves to be a *Hen-Wigeon*. Besides these, I find remaining still to be corrected, 1. A mistake about the situation of the *blind-guts* in Birds: For they do not descend from the Stomach downwards, but ascend from the *intestinum rectum* upwards, being as it were two branches of the *intestinum rectum*, and so in that respect differ not from the *Blind-guts* of *Quadrupeds*, as is affirmed pag. 7. 2. Among the Birds that want the back-toe, enumerated, pag. 3. the *Dottrel* is omitted. 3. I am now persuaded that the *Stella Avis* of *Aldrovandus* is a different kind from the *Bustard*, and that the Bird we saw in the Market at *Modena* was this *Stella*, for to my best remembrance it was much less than a *Bustard*, and therefore I revoke what was said in contradiction to *Aldrovandus* his affirmation, that the *Bustard* is a stranger to *Italy*: But it is very likely that this *Stella Avis* is the same with the *Anas Campestris* of *Bellonius*. Besides these the Reader shall find corrected those oversights and errors noted in the *Nomenclaturæ* in the *Latine*, and others which I cannot now call to mind.

Secondly, For additions there are so many throughout the whole Work that it would be too tedious to enumerate them, I shall only mention the three principal and most considerable, which might pass for just Treatates on those Subjects.

1. An Epitome of the Art of Fowling, collected partly out of *Olinæ's Uccelleria*, written in *Italian*, but chiefly out of *Gervase Markham's* Book, entitled, *Hangers prevention*, or the Art of Fowling; something also being added out of a late *English* Book, entitled, *An Epitome of the Art of Husbandry*, the Author whereof was pleased to conceal his name.

2. An Idea of Falconry, being an abridgement of the Authors long since Englished and put together by *Turbervile*; and of our own late and best approved Writer *Latham*, with something out of *Aldrovandus*.

3. Directions for the ordering of Singing Birds contracted, out of the forementioned Epitome of the Art of Husbandry, *Olinæ's Uccelleria*, and *Aldrovandus*. In all which Discourses I have corrected some mistakes in my

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Authors, illustrated what was obscure, and intermingled some observations of my own. Here by the by I cannot but reflect upon the Author of a late *English* Book, entitled, *The Gentleman's Recreation*. For having had occasion to examine and compare Books upon these Subjects, I find that all that he hath considerable concerning Fowling is taken out of the forementioned Book of *Markham*, and yet hath he not to my remembrance made any mention of his Author: What he hath of *Elawking* is likewise an Epitome of *Turbervile's* Collections, with some addition out of *Latham's Falconry*, without acknowledgment that all was borrowed. I doubt not but I could have traced him in his other Discourses of *Hunting* and *Fishing*, had I had leisure or will to compare his Book with *Turbervile's*, *Waltons*, and other Treatises of those Subjects. I do not blame him for Epitomizing, but for suppressing his Authors names, and publishing their Works as his own, inasmuch that not only the Vulgar, but even Learned men have been deceived by him, so that they have looked upon him as a considerable Writer, of extraordinary skill in such Arts and Exercises, and one that had advanced and improved them. By the way therefore it may not be amiss to caution Learned men that they be not too hasty nor lavish in their public commendations of new Books before they have taken the pains to compare them with former Treatises on those Subjects, lest they render themselves ridiculous by publishing those for advancers of knowledge, who are indeed meer Plagiaries and Compilers of other mens Works.

I might have added a censure of the flesh of Birds in reference to wholesomeness in Diet, but that is done in the particular Species, and by many Authors in the Dietical part of their Institutions of Physic; only in general we have taken notice, 1. In Land-fowl, that the flesh of no Carnivorous Bird is good meat, neither of the *Rapacious* kind that touch no Vegetables; nor yet of the *Crow-kind*, which feed promiscuously upon Flesh, and Fruits, or Seeds. 2. That the flesh of such birds as feed only upon Insects is not approved good meat, for example, *Woodpeckers* and *Swallows*. As for small Birds of slender Bills that are reputed good, they feed as well upon Fruits and Berries as upon Insects, though it may be chiefly upon Insects; but they are best when they feed upon Fruits, as the *Beccafigo* in Fig-time. 3. The Birds that feed upon Grain and Seeds only, (if any such) or upon Fruits, or Seeds, and Insects, as the *Poultry-kind*, are the best of all. 4. Of Water-fowl, such as feed only or chiefly upon Fish are not good meat; Yet the Young of some of these are approved as a delicacy, though I scarce think very wholesome: Such are young *Soland-Geese*, *Puffins*, *Pewets*, and *Hérons*. Besides these, all Water-fowl, though feeding only upon Insects, are esteemed good to eat, and admitted to our Tables: The most delicate of these are those we have termed *Mud-fuckers*, that with their long Nebs thrust into the Earth suck out of the Mud or Ooze a fatty juyce, by which they are nourished.

Two or three Observations communicated by *Mr. Martin Lister* of *York*, my honoured Friend, being through forgetfulness omitted in their proper places in the Book, I shall thrust into this Preface. 1. The *Curruca* or *Hedge-Sparrow* lays Sea-green or pale-blue Eggs, which neatly emptied and wired I have seen fair Ladies wear at their Ears for Pendants. 2. One and the same *Swallow* I have known by the subtracting daily of her Eggs to have laid nineteen successively, and then to have given over. 3. The *Bunting* breaks not Oats, but hulls them most dexterously, as I observe, having of them by

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me at this present in Cages. 4. The Robin-red-breast will not touch a hairy Caterpillar, but will gladly eat any smooth one that I have given him; and there is no better way speedily to tame and make wild Birds taming than to give them a pleasing Insect or two daily. 5. Neither slender nor thick-bill'd Birds but will gladly eat Spiders, as I have experienced in some.

I have no more to add, but only to advertise the Reader, that by the breadth of a Bird we understand the distance between the tips of the Wings extended; by the *flag-feathers*, or *beam-feathers*, or *quill-feathers*, or *prime feathers*, or *ails* of the Wing, we mean those of the first row. That when we say from Bill to Tail, we mean from Bill-point to Tail-end: That for brevities sake, and want of English words, I was in this Translation often forced to use Latine, as for the circle about the Pupil of the Eye, *Iris*, and in the Plural, *Irides*; for the liminary stomach described page 8. *Echinus*, and some others: And so I bid him

Farewell.

Errata.

Page 13. line 12. for *or read as*, 22. 61. Wittwall. 38. 14. Glafs. 46. 50. for the read to. 58. 6. after called add by the. 64. 18. Oripelargus. 65. 4. Cloak. 66. 39. after several add forts. 94. 56. Pauvius. 109. 32. unusual. 129. 27. after head put in of. 135. 26. lower. 137. 20. down. 143. 43. for of read to. 155. 32. wallowilh. 159. 32. gate. 201. 9. Line. 203. Birds. 233. 22. delete the rest their lower. 252. 36. after faith add being. 254. 39. seven or eight. 256. 17. cinereous. 257. 16. after lower add joint. 260. 17. fix or seven. 270. 11. tooth. 294. 17. eight or nine. 308. 8. Eggs. 311. 38. Aberdovey. 332. 27. for final read broad. 337. 45. for yard read foot. 369. 18. Schellent. 378. 22. Anas. 379. 2. Ipeccati apoa. 385. 41. for White read Yolk.

Fill up the blank page 40, line 12 with these words, (Tab. 2. Fig. 7.) That, page 46. line 45 with these (9. Tab. 2.) Page 369. line 25. blot out these words, In the lesser rows of covert-feathers is also a great spot of white. Page 374. this Figure is omitted. The Birds marked with an Asterisc are such as we our selves saw not, nor described, but borrowed their descriptions of others. But others there are besides which ought to have been marked, viz. *Bontins* his Indian Raven, page 126. Toucan 128. Jaguacati guacu 147. The Dodo 153. Mitu 158. Pauxi 160. Mituporang Ibid. Jacupema 165. Jambu 167. Damascus Partridge Ibid. Indian Quail 171. Canne-petiere 179. Attinga guacu mucu 198. Calandra 208. Girola 209. All the Birds described page 210. 211. Humming birds 230. though we have often seen many sorts of these. Wood Titmouse 243. Aldrovands first Yellow-hammer 269. Cariana 276. Anhima Ibid. Aldrovands third ash-coloured Heron 278. Squaiotta 281. The other green-footed Water-hen 313. Another green-footed Water-hen of *Bellonius* 314. All the Water-hens described pag. 317, 318. The Penguin 322. Greater crested Duck of Aldrovand 339. Water-hare or crested Mexican Ducker Ibid. The sharp tailed Island-Duck of Wormius 364. Ipecc guacu 383.

Some other literal faults or omissions, and errors in pointing there are, which because they are obvious and easy to be corrected, and cannot likely occasion any doubt or mistake, I have not here put down, lest I should seem too much to distrust either the Readers judgment, or his ingenuity. For my part, I can easily pardon so few faults of the Printers as I have observed in this Work, especially being printed from a Manuscript; as knowing by experience how difficult a thing it is for the most quick-sighted, circumspect and diligent Corrector that is, to espy all the faults that the Compilators will commit, even in one sheet of Paper, at once or twice reading over.

THE

THE FIRST BOOK OF THE ORNITHOLOGY OF FRANCIS WILLUGHBY Esq;

Of Birds in general.

CHAP. I.

Of the external parts of Birds.



I do not intend to treat of all the parts of Birds, but of those only which are either proper to this kind, or if common to other Animals, have in Birds something peculiar in their shape, size, temper, use, or some other remarkable accident.

1. All Birds in general, without exception of any, want Teeth, in stead whereof they are furnished with a Bill of a horny substance. By Teeth we understand Teeth properly so called, viz. such as are distinct and separable from the Mandibles. For in some Birds, as for example *Divers*, the Bills themselves are toothed or indented after the manner of a Saw. The Bill in Birds hath two principal uses; the one as an instrument to gather and receive their food; the other as a weapon to fight with, either by assailing others, or defending and revenging themselves. These, I say, are the principal uses, besides which it serves them also for other purposes, to wit, building their Nests, feeding their Young, preening their Feathers, and some for climbing, as the *Parrot* and *Shell-apple*.

2. In all Birds, except Nocturnal ones, the head is smaller and bears less proportion to the body than in Quadrupeds, that it may more readily divide the Air in flying, and making way for the body render its passage more easy.

3. In Birds and Fishes the eyes are more flat and depressed than in Quadrupeds. The Eyes, A circle of small plates of bone placed scalewise under the outward coat [*tunica sclerodes*] where the *processus ciliaries* are, encompasses the pupil of each eye in Birds, to strengthen the eyes, and defend them from injuries. Moreover most, if not all Birds, have a Membrane for Nictation, called in Latine *Periophthalmum*, where-withal they can at their pleasure cover their Eyes, though their eye-lids be open. This hath its rise from the greater or more obtuse corner of the Eye, and serves to wipe, cleanse, and perchance moisten the Surfaces of it. This Membrane is not proper to Birds only, but common with them to many Quadrupeds. * Dr. Harvey, * of the Great-treating of the Eyes of Birds hath this observation: The Eyes of Birds (saith he) never contract themselves to that proportion which is between the eye and head of a viviparous Animal. For if in Hens or other Birds you take off the skin covering the eyes, you shall find that either of them will at least equal the whole bulk of the brain: But in a Woodcock, and the like, either eye is greater than all the rest of the head, setting aside the Bill. In general the orbit or cavity containing the eye in all Birds exceeds the brain it self, as may be seen in their skull. Their eyes indeed outwardly appear but small, because excepting the pupils they are wholly covered with skin and feathers. In our observation the cavity containing the brain is greater than the orbit of either eye in many, not to say all, Birds.

B

4. All

The Ear.

4. All Birds want the external ear, standing out from the head. For though there is a sort of Owl called in Latine *Noctua aurita*, or the eared Owl, yet hath it not ears properly so called, but only feathers sticking out on each side the head, somewhat resembling Ears or Horns, and is therefore called also the *Horn-Owl*. I suppose the feathers encompassing the Ear-holes in Birds supply the defect of the exterior Ear. In most sorts the Ear-holes are open and uncovered; but in all nocturnal, and some diurnal rapacious Birds provided with covers.

The Bridle of the mouth.

5. The Bridle of the mouth, or the Membrane connecting the Mandibles at each corner, either fails inward when the mouth is shut, as in most Birds, or outward, as in *Larks*. By the softness, colour, and thickness of this part young birds may be distinguished from old ones.

The Epiglottis.

* L. R. The cover of the Windpipe.
† The head of the Windpipe.

The Neck.

6. All Birds want the *Epiglottis*; whence it is manifest, that part is not at all necessary to the modulation or articulation of the voice; seeing many Birds can tune and modulate their voice most melodiously, and some also speak articulately, notwithstanding they want it. The cranny in the top of the *Larynx*, through which the Air passes to and fro in respiration, lies directly under the fissure or cleft of the Palate, or the hole which leads to the Nostrils.

7. Such Birds as have long Legs, have also a long Neck; for that otherwise they could not commodiously gather up their food, either on Land, or in the water. But on the other side, those which have long Necks have not always long Legs, as appears in *Swans*, *Geese*, and other Water-fowl; whose Necks serve them to reach to the bottoms of Rivers, Lakes, and Pools of water, to fetch up thence, Snails, Whilks, Insects, Seeds, and Herbs, while their bodies swim on the Surface of the water.

The Merry-thought.

8. All Birds, instead of Channel-bones [*Claviculae*] wherewith many Quadrupeds are furnished, have a bone which we in English commonly call the *Merry-thought* [*furcula*].

The Wings.

9. All Birds whatsoever have Wings, or rudiments of Wings; which answer to the fore-legs in Quadrupeds. Among Land-fowl the *Ostrich*, *Cassowary*, and *Dodo*; among Water-fowl the *Penguin* have wings altogether useless and unfit for flight. Those especially of the *Cassowary* are so very little and next to none, that I cannot imagine what use they should be of to her. As for the *Ostrich*, her Wings extended and agitated assist her in running, being like Sails to a Ship. Insects indeed have Wings, and so have Bats, but of a different kind from those of Birds; the former Membranaceous, the latter Cutaneous: Only Birds have Wings made up of Feathers. All Birds toward the extremity of their Wings have a certain finger-like *Appendix*, which we are wont to call the *Secondary* or *Barbary Wing*: It is made up of four or five small feathers. Besides this under the wing, or on the inside of the Wing, some Birds, especially Water-fowl, have a row of feathers growing, which we call the *Interior* or *Barbary wing*; which in most Birds is white of colour.

The exterior Barbary Wing.

The interior Barbary wing.

The Legs and Feet.

10. All Birds are two-leg'd, which is common to them with man; who is therefore defined by *Plato*, *Animal bipede, a two-legg'd Animal without feathers*, to distinguish him from Birds. But this definition being rendered ridiculous by *Diogenes*, turning loose a Cock with his feathers plucked off, and crying *Ece hominem Platonium*, See *Plato's* man: To mend the matter and secure the definition from cavil and derision, they added to it *Πτερόπους*, with broad nails, thinking that thereby they had perfectly excluded all Birds; whereas had *Diogenes* been well skilled in the History of Birds, he might have soon fitted himself with a Bird to pluck, that should have answered their reformed definition, as well as a Cock did their original, viz. a *Didapper* or *Loon*, and also a *Stork*, that having broad nails as well as man. But to leave that, and return to the matter in hand; some *Swallows* indeed are called *Apodes*, not because they do altogether want feet and legs, but because they have very short, little, and infirm ones. These by reason of the length of their wings and shortness of their legs, if they happen to fall on the ground, can hardly raise themselves again. But that the Birds of *Paradise*, so called, should want feet, as was not long since generally believed, not only by the Vulgar, but also by the greatest Naturalists themselves, even such as were most conversant in the History of Animals, because those brought out of the *Indies* were wont to be mutilated and bereaved of their feet, is now sufficiently convinced to be false by the testimony of eye-witnesses, and by the Birds themselves brought over intire, so that no man in his right wits can any longer doubt of that matter.

The Toes.

11. Most Birds have four Toes in each foot, three standing forwards, and one backwards. Some few have only three, all standing forwards, for these want the back-

back-toe. Such are among the Birds hitherto known, 1. The *Cassowary* or *Emu*; 2. The *Buffard*; 3. The *Stone Curlew* or *Oedichnemus* of *Belonius*; 4. If it be distinct from the precedent, the Bird called *Stella* by *Aldrovandus*; 5. The *Anas Camperis* of *Belonius*; 6. The *Sea-Pie* or *Hematopus* of *Belonius*; 7. The *Himantopus* of *Pliny*; 8. The *Green Plover*; 9. The *Sea-Lark*, called *Charadrius* by *Aldrovandus*; 10. The *Sanderling*. And of whole-footed Fowl, 11. The *Penguin*; 12. The *Counterbeak*, *Pope* or *Mullet*, i. e. *Anas Arctica* *Clus*. 13. The *Ank*, or *Razor-bill*; 14. The *Guillemot* or *Sea-ben*; 15. The *Mergus* of *Belonius*, if it be a different Bird from the *Ank*, which we doubt of; And lastly, The *Greenland Dove*. The *Ostrich* only hath but two Toes: Yet *Margravins* gives three to the *Brazilian Ostrich*. More than four toes in each foot (whatever the Ancients report of the *Porphyrio*) Nature hath bestowed on no sort of Bird, unless you take the Spur in the Poultry kind for a Toe. Of those which have four Toes, the most have them standing three forward, and one backward; some have two forward, and two backward, as the *Cuckoo*, all sorts of *Parrots* and *Wood-peckers*, &c. Some have two forward, one backward, and a fourth movable outward, so far as to make a right Angle with the middle Toe, as the bald *Buzzard*, and perchance some other Birds of prey, and all *Owls*. And lastly, some have all four standing forward, as the *Swift*. Those which want the back-toe never sit upon Trees. The middle-toe and Leg-bone in most Birds are of equal length. In some whole-footed Birds the inmost Toe hath an external welt or border of skin all along the length of it, of a good breadth; but never the outmost.

The situation of the Toes.

* Parrots are rather of the third foot, that can move one Toe either way.

12. In all Birds that have four Toes, excepting only the *black Martin* or *Swift*, the bones of the back-toe hath but one bone, the outmost of the fore-toes two, the middlemost three, and the inmost four. Which order, so constantly observed by Nature, hath not as yet been taken notice of by any Naturalist, that I know. Of all the Birds (as I said) that we have as yet taken notice of, the *Black Martin* is only to be excepted, whose feet are of a singular make, and different from those of other Birds as shall be shewn in its History. The hinder-toe, in those Birds which have it, is situate on the inner side of the foot, supplying the place and use of a Thumb. The Claw or Talon of the hind-toe, at least in Land-fowl, is the greatest and strongest of all. In those Birds that have but one back-toe, the outmost of the fore-toes for some space from the bottom is joyned to the middle toe, that it may not fall backward, nor so much as run outward, [in most Birds, not in all.] This conjunction is either immediate by cohesion, or mediate by an intervening Membrane.

The bones of the Toes.

13. All Birds that we have yet seen and examined, even such as want a Tail, have a Rump. Upon the Rump grow two Glandules, designed for the preparation and secretion of a certain unctuous humour, and furnished with a hole or excretory Vessel. About this hole grows a tuft of small feathers or hairs, somewhat like to a Painters Pencil. When therefore the parts of the feathers are shattered, ruffled, or any way discomposed, the Bird, turning her head backward to her rump, with her Bill catches hold of the forenamed tuft, and pressing the Glandules, forces out the oily sap, and therewithal anointing the disjointed parts of the feathers, and drawing them out with her bill, recomposes and places them in due order, and causes them to stick faster together. But here we are to take notice, that the Glandules of the Rump are lesser in those Birds that want Tails, as *Columbs*, and the like, than in those that have them.

The Rump and its Glandules.

14. The *Orifices* of Excrements and that of the Womb have a contrary sit in all feathered Fowl to what they have in other Animals: For in these, that of the Excrements is placed immediately under the Tail, and beneath it that of the Womb: In those, the vent or Orifice of Excrements is situate lowermost, the aperture of the Womb between that and the Rump. *Aldrovandus* thinks the convenience of coition is the cause of this position of parts: For (saith he) in these Animals engendering, the Male getting upon or treading the Female, the Instruments of generation ought to be near one another, that they may more easily and readily couple together. Which reason is not to us satisfactory, for that Quadrupeds which mingle also by supercreffion or leaping, though they have not their Genitals to situate, experience from thence no difficulty or inconvenience in their Coition.

Hart of Gen. nat. Excr. 2.

* Ornithol. lib. 14. c. 1.

15. It is common to all Birds to have their whole body, or at least the greatest part of it, covered with feathers growing thereon. By the word body in this place I understand only the Trunk of the body: For in most Birds the legs and feet, and in some also the head is uncovered. I add [the greatest part] for the *Ostrich* sake. For

All Birds feathered.

though the legs and feet (as I said) in most Birds, and in some also the heads are naked, as for example in the *Turkey*, the *Crane*, the *Emu*, &c. yet besides the *Ostrich* we know no Bird that hath any other part of its body bare of feathers. What is reported of a kind of Hens, that bear wool instead of feathers we take to be false and fabulous. Now though the words *Penna* and *Pluma*, which we may English *Quill* and *Feather*, or hard and soft feather, be sometimes promiscuously used, at least *Penna* in good Authors contains under it *Pluma*, yet we in this work for greater perspicuity distinguish these names, with our excellent *Harvey*, in this manner: *Pennæ differ from Pluma in their shape, use, place, and order of growth. Chickens are first plumigerous before pennigerous.* [Herein I must crave leave to dissent from him, unless he comprehends the first *Lamgo* or Down upon Chickens under the name of *Pluma*, for I think the Quills begin to spring as soon as the rest of the Feathers.] For the *Penna* or *Quills* are found only in the *Wings* and *Rump*, and spring deeper from the lower part of the skin, or the very ** Periosteum*, and serve for motion and flight; the *Pluma* or feathers spring from the upper part of the skin, and are found every where in the body for defence and ornament. The Down, wherewith Birds newly hatch'd are covered, sticks, for the most part, to the tips of the primigenial feathers. In very many Birds the middle parts of the feathers are black.

How Pennæ and Pluma differ.

* The skin investing the bone.

The Tail and its uses.

† Douchers or Loons.

The Flag-feathers of the Wings.

Birds moult their feathers yearly.

The Pectoral Muscles.

16. The Tails of Birds are made up of feathers. Most Birds have this part, some few want it, as the *Doncker* or *Loon*, and a sort of *Hen*. The Tail serves them for steering their course, and turning in the Air, as it were a Rudder. This is chiefly seen in *Kites*, of which *Pliny* saith thus, *This kind seems to have taught men the Art of governing a Ship by the flexures of their Tails, Nature showing in the Air what was needful to be done in the deep.* Hence those Birds that have but a short Tail and long legs, stretch out their Legs backward in flying, to supply the defect of the Tail; whereas other Birds, which have long or indifferent Tails fly most with their Legs drawn up to their body, some few with them hanging down, as *Water-Hens*. Besides, the Tail doth not only serve for directing and governing the flight, but likewise for supporting and keeping even the body. Hence the † *Colymbi*, which have no Tails, fly very inconveniently, as it were erect in the Air, with their heads straight upward, and their Tail almost perpendicularly downward. In many Birds the outmost feathers of the Tail are whiter than the middle ones. The two middle feathers are not situate in the same right lines with the rest on each side, but a little higher or more forward. The number of Tail-feathers in no sort of Bird is odd. We have not as yet observed in the Tail of any Bird fewer than ten feathers; though *Marggravius* mentions some *Brazilian* Birds that have but eight feathers in their Tails: And it hath been told us, that the *Tropic-bird* hath only two, but those very long ones.

17. The tips of the *Flag-feathers* of the Wings run out into a point on that side the shaft in such as are gradually longer, which respects the feathers that are longer, or that run out further; so in the ten outmost feathers the exterior Vanes run out into points, because the exterior of those feathers are longer than the interior, or at least by reason of their situation in the Wing complicated run out further. In the rest of the Flags towards the body, the interior Vanes run out into points, because from the tenth inwards the interior feathers run out further than the exterior, by reason likewise of their site in the Wing closed. In divers Birds the tips of the middle Flag-feathers are as it were indented, the Vane on each side the shaft running out equally beyond the shaft. This happens when the feathers are of equal length, the Antecedent being neither longer nor shorter, nor any way more produced than the Consequent. The inner Vanes of the Flag-feathers of the Wings are in most Birds broader than the outer.

18. All Birds, as far as we yet know, moult all the quills and feathers of their whole bodies yearly. The bottoms of all the feathers, (that is, the lower parts that appear not to sight) in Birds of all sorts are of one and the same colour, and for the most part different from what is exposed to view.

19. The Pectoral Muscles, and such as serve to move the Wings, are of all others the thickest and most fleshy. For since the flight of Birds is not performed without a strong motion, and vehement agitation of the Wings, to which force is required, it was requisite the Organs designed for that exercise should be the strongest and most able. On the contrary, in man the Muscles which serve to move the Legs are greater and stronger than those which belong to the Arm: Because their action, being to hold up the whole body, and transfer it from place to place, requireth great ability and vigour. Whence, if it be possible for Man to fly, it is thought by them who have

curiously weighed and considered that matter; that he that would attempt such a thing with hope of success, must so contrive and adapt his wings, that he may make use of his legs and not his arms in the managing of them.

CHAP. II.

Of the inward parts of Birds.

THE learned Doctor *Willis* in his Book of the *Anatomy of the Brain*, Chap. 5. doth largely treat of the Brains of Birds, where he accurately describes their Teguments, Parts, and Ventricles, in these words: 'The upper part of the Skull covering the Brain being taken up, the thicker Membrane or Tegument, called, *Dura Meninx*, straitly embraces the whole bulk within contained. In the middle of this Membrane, where the Brain is divided into two Hemispheres, there is a *Sinus* [a hollow Cavity or Vessel] extended long-ways; which (no Sithe-like process being there let down between the Hemispheres, as in Men and Quadrupeds) is not very deeply inferted into the Brain: In that part of this Membrane which interposing it self divides between the Brain and the *Cerebellum*, there are formed two lateral *Sinuses*. There is moreover in Birds the fourth *Sinus*, but situate something more backward than in Man or Quadrupeds. For a little below the *Conarium* or Pine-like Glandule a round hollow process is let down from the ** Dura Mater* upon the legs of the spinal marrow [pith of the back-bone] produced where it is straightway divided into two branches, of which it sendeth on each side one upwards into the Cavity situate in the hinder part of the Brain between the striate Membrane and the Hemisphere of the Brain.

This uppermost Membrane, called *Dura Meninx*, being cut off round about, and laid aside, the very thin Membrane immediately investing the Brain, called *Pia Mater*, comes in view: Which is not adorned with such a thick contexture of Vessels as in Man and other perfect Animals; but consisting of a very subtil web of Fibres, doth only wholly invest and closely embrace the plain and even Surface of the Brain, devoid of all windings or plaits [*Gyrus & anfractus*.]

The Fabric of the brain in Birds, is unlike to that of Men and Quadrupeds: For besides that it hath no windings [*anfractus*] or inequalities in its exterior part, inwardly also the callous body, the *Fornix* or arched Roof, and also the striate bodies, such as we have before described; moreover, the whole frame of the Brain is otherwise contrived and figured. That these things may be more clearly perceived, take for dissection the Brain of a *Goose* or *Turkey*, and having cut open the Teguments, pressing gently where the fissure of the Brain is, separate by degrees the one half from the other, till you come to the very bottom, in which are two pithy bodies, which being stretched out transversely like Nerves, connect the Hemispheres of the Brain together. Both sides of the Interstice are invested with a whitish Membrane, marked with streaks as it were rays, drawn from the whole compass or Circumference thereof toward the inferior Angle: Which streaks are concentrated about the infertions of the medullary bodies. This Membrane being cut there will appear underneath it in each Hemisphere of the Brain a Cavity extending it self over the whole space on that side the Interstice, and also covering the hinder Region of the Brain, the Roof whereof is the said Membrane. Both Cavities about the bottom open into an intermediate common passage or channel going out into the ** infundibulum*, and from both sides of that passage are stretched forth the legs of the produced spinal marrow [*Medulla oblongata*] on which the Hemispheres of the Brain on each side are hung by the two medullary bodies; to wit, from the main bulk of the Brain lying under the Ventricle the one half of the spinal marrow proceeds, and from the striate Membrane covering the Ventricle the other half. From both these placed in both sides certain medullary bodies, already mentioned, shooting forth transversely like Nerves do connect the two Hemispheres of the Brain. Moreover, these two uniting and growing together on both sides, do fasten both Hemispheres of the Brain to the legs of the spinal pith produced, [*Medulla oblongata*.]

So that the figure of the Brain in Birds, compared with the Brains of Men and the more perfect Quadrupeds, seems to be as it were inverted. For as in these

* The exterior and thicker Coat or Tegument of the Brain.

* The funnel or hole leading to the *Pituitaria Glándula*.

the cortical part is exteriour and uppermost, and the medullary spread under it; so in Birds the lower part, consisting of a thicker and more bulky body, answers to, or is in stead of the bark; the external and superiour Membrane covering the Ventricle being above any part the most pith-like. Furthermore, the Ventricles in the Brains of Men and Quadrupeds are situate beneath, near the base or bottom of the Brain; in Birds uppermost, and near the outside. The reason of this difference seems to be, because in a more perfect Brain, such as are those of Men and Quadrupeds, the Animal Spirits have both their original and exercise therein; viz. they are generated in the cortical part, and in the Medullary (spread copiously under the cortical) circulated and variously expanded for the actions of the several faculties. But in the Brain of Birds there is indeed space sufficient for the generation of Spirits, but scarce any room afforded for their circulation. For the Brains of Birds seem not to be much employed in the functions of Fancy or Memory. Yea, moreover it is to be thought, that the Spirits produced in the Brain are exercised for performing the animal function chiefly in the *spinal pith produced*, [*medulla oblongata*] for there (as we shall shew anon) the Medullary substance, which is in stead of the ** Callous body*, is placed: And to the ** striate bodies* in others, answer the *striate Membranes* in these; by which the Spirits procreate in the Brain, without any marshalling or ordering there, are forthwith carried into the *prolonged pith*. But because the Spirits generated in the Brain must somewhere depose their serous Excrements, therefore from the complication of the *striate Membranes* over the hind-part of the Brain and the legs of the prolonged pith, do result Ventricles fit enough for that purpose. Howbeit in the brains of Birds, the ** Fornix* being wholly wanting, there are only the two anterior Ventricles; within which the *Plexus Choroideus* is spread out; the Venose portion whereof (as was just now said) hath its rise a little lower from the fourth *Sinus*, but the Arteries come from both sides the prolonged pith.

Neither doth the Heterogeneity, or conformation different from that in Men and Quadrupeds, appear more in the Brain of Birds than in the *Spinal pith produced*: for in the first ** Section* thereof, whence the Optic Nerves arise, two eminent protuberances or bunches grow to each side. These are in proportion much greater than the Orbicular Prominencies in more perfect Brains, so that they seem to be a secondary or subordinate Brain: Both are of a whitish colour, and purely Medullary, with an internal Cavity: So that in this sort of Animals are found two Ventricles in the Brain, and as many in the *prolonged pith*. And whereas in these, as in all other Animals, there is also a Cavity under the *Cerebellum*, the Ventricles in the whole Brain differ as well in Number as in Figure and Position.

In the middle of the ** Medullary Trunk*, to wit, where those prominencies grow to its sides, is a cranny or incisure leading to the funnel [*infundibulum*] into which both Ventricles have their outlets or apertures; so that there is no doubt, but the ** Serofities* there collected are that way avoided. Moreover, it is very likely, that these hollowed and medullary prominencies in Birds do supply the place and use of the *Callous body*; the Animal Spirits being in them circulated for the exercise of their Faculties. For the room in the Brain is but strait, so that within its limits the Spirits cannot be both produced and circulated. Furthermore, whereas in Birds there is more use of Animal Spirits for the actions of the loco-motive faculty, than those of the Fancy or Memory, consequently their chief place or rendezvous, where they both convene and are exercised, ought to be situate in the prolonged pith, rather than in the Brain.

The ** Carotide Arteries*, which bring blood to the Brains of greater Birds, are so small that they bear no proportion to the same in Man and Quadrupeds. Their trunks being entered, the Skull without any divarication into the *Net-like plexus*, after the same manner as in other Animals, ascend by the *Pituitary Glandule*, and proceed strait to the Brain, and so distribute certain slender twigs both to its exterior circuit, and through its interior recesses. For indeed the Brains of Birds are irrigated with a very small portion of blood in respect of other Animals; because not much blood is required to the refection of the Animal Spirits, where the fancy and imagination are not much exercised.

Birds (contrary to what some assert) have both the ** Mammillary processes*, and the ** Sieve-like bone*: for the anterior productions of the Brain very much extenuated and involved in the harder Tegument or Membrane, [*Dura Meninx*] running forward almost to the middle part of the Bill, are inserted into a Triangular Bone, wherein is a double *Sinus* or Cavity, divided by a thin partition [** Septo.*] These

processes of the brain being brought into the *Sinus* or Cavities of the forehead bone, end in bladders full of a limpid water, which do plainly resemble the *Mammillary process* in a Calf, replete with the like fair water. Moreover, seeing that from the fifth pair of Nerves a remarkable branch in each side passing through the orbit of the eye, enters the Cavern of the Nofthril, a branch sent forth from its trunk is bestowed upon the very Orifice of the Nofthril; in the mean time both the greater trunks being compassed about by the Cribrose bone, meet together, and by and by again separating or receding from each other, and being brought to the end of the Bill are distributed through the palate. After this manner Birds as well as men and Quadrupeds are furnished with a peculiar Organ of smelling, viz. a double mammillary process, and have moreover within their Nofthrils accessory Nerves from the fifth pair; by whose action, and the communication of their branches to other parts, there is even in them contracted so near an affinity between the senses of smelling and tasting. The other pairs of Nerves agree most what with those of man and Quadrupeds. We have likewise observed, that as to the little Brain [*Cerebellum*] and the remaining portion of the prolonged Pith, there is no great difference between Birds and those other Animals we have before considered: Save that the Orbicular Prominencies before the *Cerebellum*, and those other amulory ones under it, which occur in those, are both wanting in Birds. Indeed, these latter seem not at all needful, and as for the former, those *medullary hollow prominencies*, which we have shewn to be in Birds, supply their rooms, and make amends for their absence.

Thus far D. Willis: All which things we have by experience found to be just so as he hath deliver'd; though perchance the Reader that is not well skilled in Anatomy may experience some difficulty in understanding them, especially not being illustrated by figures, to assist his fancy.

The Lungs in all birds that we have dissected, and without doubt in all others whatever, stick so fast to the sides, ribs, and back, that they can be but very little dilated or contracted. Moreover (which yet, saith ** Dr. Harvey*, I do not remember to have been hitherto observed by any man) the ends of the branches of the wind-pipe are in them perforated into the cavity of the belly, and do convey the air drawn in by breathing into certain membranes stretched out along the length thereof. So that in Birds the Lungs seem rather to be a way or passage to respiration, than the adequate organ thereof. But those membranes now mentioned (at least with the assistance of the Muscles of the belly) serve for respiration, and perform the office of the Midriff. This perforation of the Lungs is not obscure or hardly discernable, but so open and conspicuous, that in those of an Ostrich I have found many holes, that would easily admit the tips of my fingers. In a Turkey, and even the common Dunghil-cock, and almost all Birds, thrusting a Probe into the wind-pipe, you may find open passages out of the Lungs into the hollow of the belly. Air blown into their Lungs by bellows passes forcibly into the lower belly. Now Birds have either no Midriff, or at least not such a muculous one as men and Quadrupeds; the fore-mentioned membranes, supplying (as we said) the defect, and performing the office of a Midriff.

No Birds have more stomachs than one, unless you will take the *Crow* for a stomach, which for the most part hangs without the trunk of the body, at the lower part of the neck before the breast, by the bone called the Merry-thought. The use thereof seems to be to moisten and to mollify, macerate, and prepare the meat for the stomach. Hence some Birds (saith ** D. Harvey*) do cast up the meat so macerated into the mouths of their young, and feed them therewith, (after the same manner as Quadrupeds nourish theirs with milk) as may be seen in the Pigeon-kind, and in Rooks. Perchance also because the stomach in such birds as have a muculous one, is not of capacity enough to receive and contain so much food as may suffice for the uses of the body; either in Winter-nights or long fasting, which for want of food by various accidents Birds are not rarely necessitated to undergo, the *Crow* is given them by nature for a Satchel wherein to store up plenty of food, when it is afforded, which afterwards it may little by little deliver over to the stomach.

A Gizzard or stomach furnished with thick and strong muscles is proper to Birds, but not common to all sorts of them, for Rapacious and some piscivorous Birds have a membranous one. The use of the Gizzard seems to be for the grinding of hard meat, for example, *Wheat, Barley, Pease*, and other sorts of Corn and Pulse, which birds swallow whole; and so in granivorous birds to supply the defect of teeth. Which that it may the more effectually perform, these birds do now and then swallow small

* Corpus callosum.
† Corpus striatum.

* The vaulted roof.

* Branching or division.

* The body of the pith of the back-bone.
† Warty Excrements.

* Arteria Carotidis.
† Textures or complication of vessels.

* Processes mammillares; Pap. like.
† Os trigonum.

The Lungs.
* Lib. Gr. nat. Animal. Exercit. 2.
The perforation of the Lungs.

The Crow, and its use.

* Dr. Geener. Animal. Exercit. 7.

The Stomach or Gizzard, and its use.

Why Birds swallow stones

* Dr. Generat. Aims. Exercit. 7.

small pebble stones and sand or gravel, which together with their meat, they keep in their stomachs (no such thing mean time being found in their crops) by the help whereof the fore-said Muscles, as it were two mill-stones, bound fast together by their two hinges, do grind and levigate the grosser and harder meat, and so promote the digestion of it. That this is so (saith *Dr. Harvey) appears in many sorts of birds: in whose Gizzards, if the small stones or other hard and rough things remain long, by their continual attrition they become so worn and smooth, that they are rendred unfit for the comminution of their meat, and are therefore cast out of the stomach as useless. Hence birds when they chuse out stones, they try them with their tongues, and if they find them not to be rough, they reject them. So have I found in the stomach of an Oltich, and also of a Cassoware Iron, Silver, and stones much worn and almost consumed. Whereupon it is commonly reported and believed, that they concoct Iron, and are nourished therewith. If you lay your ear close to the bodies of Falcons, Eagles, and other Birds of prey, while their stomachs are empty you may perceive the manifest noise of the stones therinto swallowed, striking one against another. For neither do Hawks for cooling their Bodies (as is the common error of Falconers) swallow stones, but for the comminution of their meat. In like manner other Birds, (especially such as have a fleshy stomach or gizzard for the grinding of their food) do for the same purpose swallow stones, gravel, or some such like things, as we said before.

Birds of prey have a membranous stomach.

In terrestrial Birds of prey, and some piscivorous fowl, because they feed upon flesh, which easily melts and dissolves in the stomach (being softer than grain, and needing little grinding) at least is quickly macerated by its acid ferment, the stomach is rather membranous than musculous. For Birds of prey tear the flesh with their beaks, which disposes it to concoction. Whence also carnivorous Quadrupeds have ferrate teeth, fortearing the flesh of their prey from the bones; neither do they chew their meat much, as do tame beasts, and other herbivorous and granivorous Animals. It suffices them to tear it to small pieces, and by a chop or two of their teeth strongly to pinch, crush, or bruise it. For this kind of confusion disposes it to corruption, and perchance a more quick and speedy one, than if it were ground small by a long mastication.

The Echinus or Anc-stomach.

In many Birds the Gullet immediately above the stomach is dilated into a certain bag, as it were a liminary Ventricle, which they call *Echinus*, because in some birds it hath its inward Superficies rough with many excrescences; in others it is only thick set, or as it were granulated with very many papillary glandules, out of which a mucilaginous juice is easily pressed: This juice being by these glandules excerned into the stomach, and there mingled with the meat, serves for a *Mensurum* to macerate, dissolve, and change it into Chyle.

The Appendices or blind guts.

Most Birds have two blind guts or *Appendices*, as they call them: the *Heron-kind* have but one; and the *Woodpecker-kind* none. Among such as have two, all carnivorous fowl, and all that we call *small birds*, have very small and short ones; cloven-footed Water-fowl, of a mean length; whole-footed Water-fowl, long ones; and Poultry-kind, the longest of all. The *Appendices* in Birds have a contrary site to the blind guts in Quadrupeds. For in Quadrupeds the blind gut seems to be nothing else but the **Colon*, continued or produced from the fundament upward, making acute Angles with the gut called *Ileum*; but in Birds the *Appendices* descend from the stomach downwards toward the Fundament, making acute Angles with the gut called *Rectum*. What the use of these *Appendices* or blind guts in Birds and beasts may be, I confess my self not clearly as yet to understand.

The single blind gut, called *dactylus* in Testaculis.

In most Birds we have about the middle of the guts observed a certain small *Appendix* or blind gut, like a little Worm, which is nothing else but the remainder of that passage by which the Yolk is conveyed into the guts of the young chicken. In some birds this is very conspicuous, being of half an Inch, or almost an Inches length; In others it is much shorter and smaller, and in some again it is wholly obliterated and disappears. The use of this passage Mr. *Nicolas Steno* did first find out, or at least first publish to the world the invention of. It is true indeed it was known to us before we saw his Book, I think we had the first notice of it from Dr. *Walter Needham*. However the glory of the Invention is of right due to him, who first communicated it to the world. *Aristotle*, *Fabricius ab Aquapendente*, Dr. *Harvey*, and others, have observed a great part of the Yolk to remain in the Chickens belly after exclusion, yet did they not know that it was by this passage as it were by a funnel conveyed into the guts, but thought that by the mediation of capillary veins dispersed through it, it was by degrees liquefied, and received immediately into the blood.

The

The outlet of the channel from the Gaul to the guts in most Birds is a great way distant from the stomach: because (say some) they do not make water, and so there is more fluid matter mingled with their Excrements. For the use of the Gaul is partly to attenuate and make fluid the Excrements, partly by its acrimony to stimulate the guts, and provoke Excretion. But upon this account there should rather be less need of Gaul, Birds therefore being now known to have large reins, and to avoid Urine with their harder Excrements; their Excrements also, excepting those of the carnivorous kind, being not very fluid, considering the quantity of Urine mingled with them, perchance the Gaul-channel may enter the gut at such distance from the stomach, for no other reason than lest the Gaul should regurgitate into it. In very many Birds the passage from the Gaul-bladder* and the **Porus biliaris* do not concur in one common channel, but penetrate the gut severally at a good distance the one from the other.

All Birds though they want a bladder for Urine, yet have they large reins and ureters by which the Urine is carried away. Birds (saith *Dr. Harvey) and Serpents, which have spongy lings, make but little store of water, because they drink but little, and that by sipping; and some of them, as Eagles, not at all: and therefore they have no need of a bladder; but their Urine distils down into the common sewer or sink [Cloaca] designed also for receiving the Excrements of the belly, and being therewith mingled, both are cast out together. This Urine of Birds differs from that of other Animals: for whereas there are in Urine two parts, one more serous and liquid, the other more thick and gross, which is called the sediment [hypotalis] and subsides or settles to the bottom, when the Urine is cool. Birds (contrary to viviparous Animals) have the greatest quantity of this thick part, which is distinguished from the other by its white or silver colour, and found not only in the common sink (where it abounds) and daubs or smears over the excrements of the belly, but in the whole channel of the Ureters, which may be distinguished from the coats of the Kidneys by this whiteness. Neither is this grosser matter descending from the reins to be seen in Birds alone, but also in Serpents, and other oviparous Animals; especially those whose Egg is covered with a hard shell. They have also greater plenty of this than of the more serous and thin part; which is of a middle consistence between thick urine and dung; so that passing through the Ureters it resembles milk curdled or lightly condensed; and being cast forth easily congeales into a friable crust. See more of this matter in Harvey, *De Generat. Animal. Exercit. 11.* The Ancients taking it for granted that Birds make no Urine, aligned this reason thereof, That all the superfluous moisture was spent in nourishing the feathers.

All Birds that I have hitherto dissected have a double *Pancreas*, which some call the *Pancreas Sweet-bread*, in Quadrupeds.

The stones of Cock-birds are deeply withdrawn within the cavity of the body, being fastned to the back just beneath the Liver. In the Spring time when they are full of Sperm they swell to twice or thrice the bigness they are of in the Winter.

In some whole-footed broad-billed birds and Divers the Windpipe ends in a kind of Vessel made up of bones and intermediate membranes, being in divers birds of a different figure; from which arise the two branches going to each side of the Lungs, by which the bones give the figure and consistency to this Vessel, as do the Ribs to the Breast, and the annular Cartilages to the Windpipe. In some birds this Vessel is made up wholly of bone, as in *wild Ducks*, without any void spaces to be filled and closed up with membranes. This Vessel from the windings of its internal Cavity we are wont to call a *Labyrinth*. What the use thereof is, whether to increase the force of the Voice, or for a receptacle to contain Air, which may serve them while they dive, to enable them to continue longer under water, or to perform both these offices, or for neither of them, we do not as yet certainly know. That it doth not serve to intend the Voice, may be gathered from that some Birds of this Tribe that want it, have a shrill and vehement Voice. And that it doth not conduce to diving, may be inferred from that the *Douckers* (*Columbi*) which of all birds dive most, and continue longest under water, want it. Since the writing of this we have been assured by art *ingenious observer of what we did indeed suspect before, but were not very confident of, viz. That these Vessels are proper only to the Cocks in the broad-billed or Duck-kind; but in the Divers [*Mergi*] common to both sexes, at least if we be not mistaken in our opinion of the difference of sex in those Birds; what we take to differ only in sex, differing specifically.

The passage of the Gaul to the guts. The use of the Gaul.

* The pipe that carries the Gaul from the Liver to the Guts.

Birds have large Kidneys and Ureters. * Of the Generation of Animals. Exercit. 7.

Two parts in Urine.

The Pancreas.

The Testicles.

The vessel of the Windpipe or Labyrinth.

* Mr. Drel, Apothecary in Cambridge.

CHAP. III.

Of the Generation of Birds.

The Eggs of Birds.

Hen-birds have from the beginning all the Eggs they afterwards lay.

† Puff bearing

* Dr. Genrat. Animal. Exercit. 12.

† Egg clusters or knots of Eggs.

† Eggs of Semino. Ovaris. 12. * Clusters or knots of Eggs.

The parts of an Egg. 1. The Shell.

2. Four Membranes.

3. A double White.

4. The Yolk.

5. Two Treddles.

ALL Birds are oviparous, that is bring forth Eggs, and not live Young. This though it be common to Serpents, Fishes, and Insects; yet in Birds the figure of the Eggs, and the brittleness of the Shell, and the distinction of White and Yolk, and the manner of Incubation are peculiar. The Eggs of all Birds, if the exterior bark be pulled off, are white.

It is most probable, that Hen-birds have within them from their first formation all the Eggs, they shall afterward lay throughout their whole life time; so that when their cluster of Eggs is wholly spent, they cease breeding, and become effete: as *Angelus Abbatius* hath observed of Vipers. For we our selves have found in Birds that breed only once, or at most but twice in a year, a lump of seed-eggs (as I may call them) enough to serve them for many years productions. Seeing then it is certain that some birds do become † effete with age, and that all of them have at all times of the year a considerable mass of Eggs within their bodies, I think we do not without reason thence infer, that all the Eggs they shall ever lay are connate with them. I am not ignorant that * *Dr. Harvey* doth assert, that though a Hen hath no seed-eggs within her, yet after coition she will breed new ones. But I think that Great Naturalist did not sufficiently consider or examine this matter, and therefore he doth only touch it obliquely, and by the by. For he together with *Fabricius* doth confess that there are in the † *Ovaria* of Hens, and almost all other oviparous Animals an innumerable multitude of Eggs of divers growths from an almost invisible quantity to the consummate magnitude. Now why should Nature prepare to great a flock of Yolks (which as we said would suffice for many years births) if she had given to females a faculty of generating new ones. Neither is it true only of Birds, but also of all female Quadrupeds, yea, and of women themselves, that they have in them from the beginning the Eggs or seeds of all the conceptions, they shall afterwards bring forth through their whole lives. For those two bodies in Females that are wont to be called Testicles, are nothing else but two * *Ovaria*, as will manifestly appear to any one that will but take the pains to dissect them, made up of very many Eggs of different magnitude, all which being either brought forth, or by any means marred and corrupted, that female ceases to bear, neither doth there remain to her any further hope of generation.

The parts of an Egg are, 1. The Shell; which hardens in the very womb, before the Egg be laid; contrary to what *Aristotle*, *Pliny*, and *Fabricius* at *Aquapendente* following them, have delivered. And this any one may with his fingers easily try in a Hen with egg ready to lay; or if he dare not trust his fingers, let him but open the Hens belly, and his eyes will convince him of the truth of what we say. But if any one wants either opportunity or will to make trial, let him consult the eleventh *Exercitation* of *Dr. Harvey's* Book of the Generation of Animals, and he will there find it clearly demonstrated. "2. Four membranes, two exterior, which begin and embrace the outer White, one interior which contains the Yolk, and a fourth middlemost, which encompasses the inner White. 3. A twofold White, which *Dr. Harvey* first observed in a Hens Egg, both involved in their proper membranes, the one thinner and more liquid, the other thicker and more clammy, and a little more inclining to whiteness; in staler Eggs after some days incubation growing yellowish. As this second White covers the Yolk round, so that exterior liquor encompasses it. That both these Whites are distinct is even from hence manifest: The outward bark or shell being taken away, if you pierce both the subjacent membranes you shall see the exterior liquid White forthwith flow out. Then turning back the said membranes this way and that way into the Platter (in which the Egg is supposed to lie) the interior and thicker White will still retain its place and globose figure, viz. being terminated by its proper membrane, which is so thin that it is altogether invisible to the eye. This if you cut, the second White will straightway run out, and diffuse itself this way and that way, and lose its round figure, just as any liquor runs out of a bladder containing it, when it is cut. Then the proper membrane of the Yolk broken, the Saffron-coloured liquor flows out, and the former globosity subsides [or sinks.] 4. The Yolk, of which see *Dr. Harvey's* Book of the Generation of Animals, *Exercit. 12.* 5. Two Treddles, one in the acute, the other in the obtuse Angle. The greater part of them is within the White, yet do they stick

fast to the Yolk, being hung upon its membrane. They are oblong bodies, more concrete than the White, and also whiter, knotty, and not without some bright-ness, wherein they resemble Hail, whence they took their name [Chalazæ.] For each Treddle consists as it were of many hail-stones joyned together by the White. The one of these is greater, and stretched out further from the Yolk towards the obtuse end of the Egg; The other is less, extended from the Yolk downwards toward the acute part. The greater is made up of two or three knots, as it were hailstones, standing at a moderate distance one from the other, the lesser in order succeeding the greater. These Treddles are found in all the Eggs of all birds, as well * subventaneous as fecund. Whence appears the common mistake of our * *Houflewives*, who think that the Treddles [Grandines] are the Cocks Sperms, and that the Chicken is formed of them. [This is a mistake not of old Women or common People only, but also of great Physicians and Naturalists, as *Hieronymus Fabricius* at *Aquapendente*, in his book of the Formation of the Egg and Chicken, and *Joannes Faber* in his excellent Expositions of some Pictures of Mexican Animals of *Reeclius*. His words are these: Which I long ago most diligently observed before I heard of *Aquapendentes* work, to wit, that the Chicken hath its first rise or original from the Treddle, which the Italians call La Galladura; the Germans most fitly Den vogel, that is, the bird, because the bird is bred or formed of it. This part is situate between the Yolk and the White in the likeness of a hailstone or pretty great oblong Pearl, and is of a substance somewhat different from the White, viz. more hard and tough, which therefore our Cooks and Housewives, when they mingle Eggs with Broths, Caudles, or any other liquid meat, are wont to separate and take carefully away, as which with much beating can hardly be dissolved, unless you put Salt, or Sugar, or Vinegar to it.] The use of these is to be as it were the Poles of this * Microcosm, and the connexions of all the membranes twisted and knit together, by which the liquors are not only conserved each in its place, but do also retain their due position one to another. 6. A very small white circle, growing or sticking to the coat of the Yolk, as it were a little car; which therefore *Fabricius* named *Cicatricula*. This speck is very little, scarce to be seen as a Lentil, resembling the pupil of a small bird, white, plain, and circular: and (which is especially to be noted) is in all Eggs from their first original in the * *Vitellarium*. This is the principal part of the whole Egg, for the sake whereof all the rest are formed, and out of which the Chicken hath its first original. Thus far *Harvey*.

The stalks of Eggs, whereby they grow to the Ovarium, are not solid after the manner of the footstalks of fruits, but hollow and fistulous.

Eggs, if you press them between your hands longways, are very hardly and not without much force broken.

Eggs violently shaken, till the Yolk and White be mingled, the containing membranes being broken, may be set upright upon the blunt end, which otherwise the Yolk and White remaining entire can very hardly be so erected. For the Yolk being suspended between the Treddles, hangs quivering, and by the least motion or inclination vibrates to and fro within the Eggs, and changing the center of gravity, hinders its erection.

Eggs being macerated in Vinegar their Shells will be dissolved, so that they may be thrust into a narrow-mouthed Vessel, or drawn through a Ring.

Whereas there is in Eggs a double liquor, Yolk and White, the Chicken is formed out of, and nourished by the White alone, till it be grown great. The Yolk serves for the Chickens nourishment after it is well grown, and partly also after it is hatched. For a good part of the Yolk remains after exclusion, being received into the Chickens belly; and being there reserved as in a store-house, is by the formerly mentioned channel, as it were by a funnel, conveyed into the guts, and serves instead of milk. For whereas viviparous Animals are furnished with milk, wherewith to nourish their tender young, till by degrees they are accustomed to and grow able to bear firmer and harder meat; in birds, which want Paps and milk, Nature, Gods handmaid, hath provided and laid up in the middle of the Egg the Yolk for the nourishment of their newly hatched young. *Dr. Harvey* confirms this in *Exercit. 53.* of his book of the Generation of Animals. The White (saith he) is first spent, the Yolk comes not for food till late, and is to Chickens newly hatched what milk is to viviparous Animals newly brought forth: that what kind of nourishment Nature affords by the Paps in viviparous Animals, the like in oviparous she may confer by the Yolk. Whence it comes to pass, that all the White being consumed, the Yolk remains almost entire in the Egg, when

when the Chicken is now perfect and consummate, and part of it a long time after its exclusion; for even after six weeks we have seen somewhat of it remaining in the belly of the Chicken, sticking to the guts.

The young
is in the *Cicatrula*
before
incubation.

* Trillatus
Ova.

Whereas we said the *fetus* is formed of the *White*, by *White* we do not mean any part of the *White* indifferently, but the purer and more lucid part, contained in the little bubble or bladder, called the *Cicatrula*, in which the Chick is originally formed. Yea, the deservedly famous, and most sagacious searcher out of the secrets of Nature, * *Marcellus Malpighius*, hath observed the first strokes or rude draught of the Embryon in the *Cicatrula*, even before incubation, as the young plant in the Seed, which is the Egg of the Plant. And which is yet more, he hath observed even in subventaneous Eggs something in the *Cicatrula* like to a *Mola* or false Conception. Dr. *Harvey* seems not to be constant in his opinion about the formation and nutrition of the Chicken in the Egg. For in some places he asserts, that it is both originally formed of, and also nourished by both liquors, I mean, the Yolk and *White*; as for example, in the 36. *Exercitation*, where he hath these words: *Indeed from the course of the umbilical veins, and the distribution of their branches, which without doubt serve for drawing in nourishment, it doth manifestly appear, that the constitutive matter and nourishment of the Embryon-chicken is supplied as well from the Yolk as from the White, and that liquor called by us the Colliquamentum seems to be made up no less of the Yolk than the White: for something of both humours doth melt or dissolve into that liquor. Moreover, the speck out of which dilated the Colliquamentum is first made, and which is called by us the eye of the Egg, is impressed on, or sticks to the Tunicle of the Yolk.* Elsewhere he affirms that the Chicken is first nourished by the liquor of the *Colliquamentum*, than by that of the thinner *White*, afterward that of the thicker, and last of all of the Yolk. *Exercit. 21. After the tenth day the greatest part of the White is spent upon the Colliquamentum, and thence upon the * fetus, to wit, the whole thin White, and the greater part of the thicker. But the Yolk appears larger than it was at first. Whence it is evident, that the Yolk doth not as yet serve for nutrition, but is afterwards deputed to that office. And as far as I could gather from the progress [ductu] and distribution of the veins, the fetus from the very beginning is nourished by the Colliquamentum, for that the veins are at first disseminated in that only, then spread into the membrane of the thinner White, and afterward into the thicker White and the Yolk.*

* The Em-
bryon bird.

Viviparous
Animals breed
of Eggs.
The supposed
Testicles of
Females are
masses of
Eggs.

All Animals come of Eggs, as well those called *viviparous* as *oviparous*: For the females of the *viviparous* have Eggs within them, though they do not bring them forth. To wit, those two bodies, commonly called *female testicles*, are nothing else (as we said before) but knots or masses of very small Eggs, as will manifestly appear to any one that shall dissect them; so that we cannot but wonder that a thing so plain and evident should so long escape the observation of the curious and inquisitive eyes of ancient and modern Anatomists. This difference there is between the Eggs of *oviparous* and *viviparous* Animals (understand it of terrestrial) that these seem to consist of one liquor, *viz.* the *White* only, whereas those contain two or three several ones. Yea, if we consider the matter more exactly, we shall I think find, that the Seeds or Eggs of *viviparous* Creatures do indeed answer to the *Cicatrula* of Eggs, in which from the beginning the young [*fetus*] is included. For the Yolk (as we said) is given to birds instead of milk: and the Egg of a *viviparous* Creature imbibes out of the womb a liquor Analogous to the *White* of Eggs. For the Egg after coition being made fecund, falls down into the womb, in like manner as the ripe fruit or Seed falls from the tree or herb upon the earth, and there sensibly imbibes the humour, wherewith the enclosed *fetus* is nourished. Then after a certain space of time it fastens it self to the womb, and after the manner of Seed fallen upon the ground, doth as it were strike root into it.

* Sitting
Fert.
† Gaping with
young.
Incubation
answers to
Gestation.

The * *Incubation* of *oviparous* Creatures is equivalent to the † *gestation* of *viviparous*, for in both the Eggs are alike kept warm, in this inwardly in the womb, in that outwardly under the wings, to the time of birth or exclusion; when the young being now grown great, and desiring the free air, breaks the involving Teguments, and comes forth into the light. Now an Egg is not unfitly called an *exposed womb*, for that it doth after the same manner administer nourishment to the *fetus* in *oviparous* Animals, as the womb doth in *viviparous*.

Spurious
Birds bred by
anomalous
mixtures.

As other Creatures, so it is not to be doubted but Birds also of divers kinds do sometimes couple together, and mingle their Seed, from whence proceeds a third and spurious production, which partakes of both kinds; which yet I suppose doth not generate its like: For otherwise the number of Species in Birds would have been ere
now

now almost infinitely increased. So although in the *Genus* of Quadrupeds a Mule be engendered by the coupling of an Ass and a Mare; yet for a Mule to bring forth young was wont to be counted a Prodigy. This anomalous coition is exercised between Birds like to one another, as being of the same Tribe, especially between Hawks and other Birds of prey of different Species; partly because these Species are very like one to another, partly because they are all very falacious.

It is wonderful which we daily experience in *Hens*, *viz.* that they will breed and lay Eggs without ever being trodden by the Cock, which Eggs though they seem to be every way perfect yet are they infecund, called by the Greeks, *ἄνισμα*, and *σενά*, and *σενά*, that is, subventaneous or wind-eggs, or if the Hens were impregnated therewith by the wind. Neither do Hens only, but other Birds also, especially such as are falacious, in the Spring time when they are full of lust, if they be gently stroked on the back, or their Genitals handled, sometimes lay Eggs without the Cock. They are (saith D. *Harvey*) *sometimes so libidinous, that if you do but lightly touch their backs with your hand, they presently lie down, and denude the Orifice of the Womb, which if you gently stroke with your finger, by an inordinate murmur, and the gestulation of their wings, they express their grateful sense of the pleasure they take therein. Moreover, that Hen-birds will thence conceive Eggs both Aristotle affirms, and my self have experienced in a Thrush, a Blackbird, and other birds, and did a great while since at first find out accidentally, and by my own loss.* "My Wife did for a long time keep a notable Parrot that had learned to speak very prettily, wherein she took great delight. This bird was so tame and familiar, that it went freely up and down the house whither soever it listed; it would search out its Mistress when she was absent, and when it had found her, with a cheerful voice it would as it were salute her, and signify its joy: When she called, it would answer her, and fly to her, and taking hold of her Garment with its beak and feet alternately, it would climb up to the top of her shoulder, and thence descending down her arm, it would at last settle it self upon her hand. Bidden to speak or sing, though it were by night, or in the dark, it would obey. Many times it would sportingly and wantonly come up in to her lap as she sat, and was much pleased to have its head rubb'd, and its back stroked; and by flaking its wings, and its flattering note, testified the great pleasure it took in those caresses and touches. I interpreted all these things to proceed from its wonted familiarity and obsequiousness: for by reason of the excellency of its speaking and singing, I took it to be a Cock. For among birds females seldom use to sing or speak much: but we have observed, that generally the Cocks do by the sweet modulation of their voice and harmonious accents endeavour to delight the Hens, and allure them to submit to their embraces.

Hens will
breed and lay
Eggs without
being ever
trodden by
the Cock.

Cock birds
sing and use
Hens.

"Not long after these grateful contractions, the Parrot (which for many years had lived healthfully) fell sick, and after many convulsions at last expired in the lap of its Mistress, in which it had so often sported. Cutting up its Carcass (that I might search out the cause of its death) I found an Egg almost perfect in the womb, but for want of a Cock, corrupted, as it happens often to small birds shut up in Cages, which want the company of the Cock.

Many birds then by how much the more falacious they are, by so much the more fruitful be they, and do sometimes without the Male (by reason of high-feeding, or some other cause) conceive Eggs; but seldom without his concurrence either perfect them, or bring them forth; but do rather thereupon fall into grievous diseases, and at last die.

Perchance it may seem to some not less wonderful, that by once treading of the Cock, all the Eggs which a Hen shall lay for a whole year after will be rendered prolific. *Fabricius*, as he is cited by * *Dr. Harvey*, saith, *That it is most true, that there proceeds from the Seed of the Cock a vertue; which renders prolific not only all the Eggs, but also the womb, appears from the ordinary practice of poor women, who keeping a Hen without a Cock, do for a day or two put it to some of their neighbours Cocks: For from that little time of companying with the Cock, all the Eggs of that whole year succeeding will be rendered prolific.* And I (saith Dr. *Harvey*) (that I might defend *Fabricius*, and find out something certain concerning the time and necessity of this prolific coition) did once in the Spring time keep two Hens for three days shut up from the Cock, each of which did in the mean time lay three Eggs, no less prolific than any others: And again another Hen, which laid one Egg the tenth day after she was shut up, and another the twentieth, and both fecund. So that it seems one or two Coits may make the whole cluster of Eggs, as least as many as shall be laid for a whole year fruitful. What follows I suppose he wrote upon presumption, and not from experience, *viz.* That though a Hen hath no Seed-eggs prepared

Hens by being
once trodden
will lay pro-
lific Eggs for
a year after.
* Dr. Harvey
Animal. Exerc. 5.

* Clutter of Yolks.

† Knot or cluster of Eggs

prepared in the * Vitellarium, yet being after coition made fecund, she will shortly breed and lay new ones, and those also fruitful. For not only those Eggs which are as yet Yolks and want Whites, or whose smallest seeds and rudiments are already in the † Ovarium, but those also which are not yet begun but shall be conceived a long time after, are by the same virtue made fecund. The same sense he repeats in other words about the end of *Exercit. 40.* If from under a Hen once rendered prolific and sitting upon Eggs (after she hath laid all her Eggs, none remaining in the Ovarium) you take away all her Eggs, she will again breed and lay more, and those also prolific. I suppose this great Naturalist was mistaken in that he affirms, that a Hen after she hath laid all her Eggs, and there be none remaining in the Ovarium, will breed new ones. For I do not see how he could make any experiment hereof: Seeing that if he had opened a sitting Hen, and had found no Eggs within her, how could he certainly know that she would have bred new ones had she lived? If he thought that all Clock-hens do lay all their Eggs, and quite empty the Vitellarium, before they begin to clock and betake themselves to sitting; he was therein surely mistaken. For I see no reason why that should be true in Hens, which I have by experience found false in other birds; especially seeing himself confesses, that there are in Hens as well as other Birds an almost infinite number of Yolks in the Ovarium of divers growths, from an almost invisible quantity to the consummate magnitude.

Timid and flight-lived Animals have numerous young, or else breed oft, or both.

To these we shall add that observation of Dr. Harvey in *Exercit. 59. de generat. Animal.* Nature hath for the most part given numerous young to those Animals, which being of little strength or courage, can hardly defend themselves from the injuries of others, and so compensates the brevity of their lives with a plentiful offspring. Nature (saith Pliny) hath given this to the Bird-kind, that those of them should be most fruitful, which are most cowardly or fugacious. For whereas generation in all Creatures is instituted by Nature for perpetuities sake, it is more frequent in those that are of shorter life and obnoxious to external injuries, lest the Species should fail. And therefore Birds that excel in strength and live by ravine, and so enjoy a longer and more secure life do seldom lay more than two Eggs at once. It is true indeed that Pigeons, Turtles, and Ring-doves do fit only upon two Eggs at once; but then they compensate the defect of number by the frequency of laying; they breeding ten times a year. Therefore they breed much, though not many at a time.

CHAP. IV.

Of the Age of Birds.

Birds are longer-lived than Quadrupeds.

A Goose 80 years old.

A Pelican of the same age.

* Quaint.

200. 2. 3. 70.

A Linnet of 14 years.

A Goldfinch of 23 years.

OF all sanguineous and hot Animals Birds are the longest lived, for the proportion of their bodies much more vivacious than Quadrupeds. Swans are said to attain to the age even of three hundred years. We have been assured by a friend of ours, a person of very good credit, that his Father kept a Goose known to be fourscore years of age, and as yet found and lusty, and like enough to have lived many years longer, had he not been forced to kill her for her mischievousness, worrying and destroying the young Geese and Gollings. Moreover, the Pelican that was kept at Mechlin in Brabant, in the Emperor Maximilian's time, was certainly believed to be fourscore years old. What is reported of the age of Eagles and Ravens, although it exceeds all belief, yet doth it evince that those birds are very long-lived. Our people (saith Albertus as he is quoted by * Aldrovandus) have found by experience, that a Pigeon lives twenty years. And as for tame Pigeons (saith Aldrovandus) a certain Person, worthy to be believed, and not unskilful in Natural History, related to me, that he had been told by his Father, who was much delighted in keeping and observing Pigeons and other birds: That he had kept a Pigeon two and twenty years, and that it bred all the while, except the last six months, in which leaving its Mate, it made choice of a single life.

But to let pass great birds, even the very smallest birds live a great while. We our selves knew a Linnet kept at least fourteen years in a Cage, which as yet shewed no signs of decay or old age. Gesner tells us, that a certain Kinman of his wrote to him concerning a Goldfinch to this purpose: The Goldfinch lives above twenty years. For at Monte when I was a child, I saw one more than twenty three years old, whose Bill and Claws were cut every Week, that so it might take its meat and drink, and stand in its place. And there is no doubt but birds that enjoy their liberty, living at large in the

the open air, and using their natural and proper food, in gathering of which they also exercise their bodies, live much longer than those that are imprisoned in houses and Cages.

What Pliny observes of Animals, to wit, that those that live longest are born longest in the womb, is to be understood of Animals of the same kind. For if Animals of different kinds be compared together, as for example Birds with Beasts, those will sometimes be found to be most vivacious which are born the least while in the womb. If it be objected, that Birds and Beasts cannot in this respect be compared together, because Birds are not at all born in the womb. We answer, that incubation in Birds is equivalent to gestation in Quadrupeds: For in both the Eggs are cherished alike, in this inwardly in the Womb, in that outwardly under the Wings, as we have formerly shewn.

CHAP. V.

Of some Proprieties and Accidents of Birds, viz. Shape, Bigness, Colour, natural Instincts, Manners, &c.

THE trunk of the body is shorter, broader, and thicker in Birds than in Quadrupeds: the head for the proportion of the body much less. For whereas Birds pass through the air, almost after the same manner that Ships swim upon the water, the Trunk of their body answers to the Hull of the Ship, their head to the Prow, (which also for its similitude is called in Latine *Rostrum*, [the beak] of a Ship) their tail to the Rudder, their breast to the Keel, their wings to the Sails and Oars: whence the Poet elegantly hath it, *Remigium alarum*, [the rowing of the wings.]

All winged Fowl in general are lesser than Quadrupeds, that is the greatest in kind than the greatest in this. Whence I esteem what is reported of the bird called *Rok*, and also of the *Cuntur* to be false, viz. "That its Wings spread reach fifteen or sixteen feet; that its Bill is so hard and strong, that it will pierce an Oxes Hide. [It is said to be covered with black and white feathers mixt, to have an even Comb, or crest like a Razor, not ferrate like a Cocks. Two of these birds (they say) are able to kill and eat up a Cow, neither do they abstain from men. There are but few of them; were there many, they would destroy all the Cattel in Peru. They report that there are four distinct kinds hereof found in the Island Mariguan. De Laet. Hist. Ind. Occident. lib. 16. cap. 13. and Leri in Hist. Brasil.]

Birds of one and the same kind kept tame, by reason of the diversity of the Climate or Country in which they live, the food which they use, and other accidents, vary much in their colours, magnitude, taste of their flesh, and perchance also figure of their bodies. Wild fowl for the most part are much what of the same magnitude and constant to their colours. For the most part, I say, this holds true in wild Birds, yet some few there be of these that vary much in their colours, as for example, *Ruffes*, of which it is reported there cannot be found two alike, and the *Scamp-duck*.

The nails, or claws, hair, horns, and the like (saith Aristotle) in Beasts spring out of the skin, whence it comes to pass that they change colour together with the skin, being white, or black, or partly-coloured, &c. according to the colour of the skin out of which they grow. But the matter is far otherwise in Birds of all sorts: for of what colour soever the feathers are, the skin underneath out of which they grow is but of one colour. Moreover, one and the same feather is sometimes stained with divers colours, and in a wonderful order. Dr. Harvey.

Of Birds some are gregarious, that is, live and fly together in companies or flocks, as for example, Pigeons, Rooks, Starcs, &c. Others in coupling and breeding time fly by pairs, the Male and his Female: After they have hatcht they company with their brood, till their young be grown up and can shift for themselves, and then they beat them away.

Some Birds live a Conjugal life, one Cock and one Hen pairing together, and both concurring and assisting each other in sitting and feeding their young. Of this sort are Partridges, and other Birds of the *Poultrey* kind. Pigeons, of which the Cock takes his turn of sitting, building the nest, and feeding the young. In those that pair, there are always more Males than Females bred; but in such whercof one Male suffices for many Females, more Females than Males. Most

The figure of the body in Birds.

Beasts in their kind greater than Birds. Description of the Bird Cuntur.

Tame Birds of the same kind are of different colours, &c. wild constant to the same.

Birds tame gregarious, some fly by pairs, &c.

Birds pair together, uniting a Conjugal life.

Birds sleep with their head under their wing, and standing on one foot. Natural instincts in Birds.

Most Birds while they sleep turn their head backward, and put it under their wing; and also stand upon one foot, the other being drawn up, to keep it warm, as I suppose, among the feathers, or by the heat of the body.

That there are in Animals those they call natural instincts, the manner of building their Nests in Birds is alone sufficient to evince. For whereas those of the same Species in Countries most remote and distant from each other do make their Nests always of the same materials, and constantly observe the same shape or form of them, as if they made them by the same pattern, they must necessarily either learn so to do by institution, or imitation of their Parents, or else have the knowledge or ability so to do by natural instinct: but neither by institution, for who ever saw the old or the young teaching or learning of one another? Nor by imitation, for the young forsake the Nests so soon as they are fledg'd; when as they are very simple and witless, and neither regard nor heed almost any thing but their food: and themselves next Spring building they could neither see their Parents making their Nests, nor any other birds of their kind, whom they might imitate. It remains therefore that they act by instinct.

Admirable instincts of Birds.

The affection of Birds to their Eggs and Young.

And here we cannot but admire, with Harvey, some of these natural instincts in Birds, viz. that almost all Hen-birds should with such diligence and patience sit upon their Nests night and day for a long time together, macerating and almost starving themselves to death; that they should expose themselves to such dangers in defence of their Eggs: and if, being constrained they sometimes leave them a little while, with such earnestness hasten back again to them and cover them? Ducks and Geese while they are absent for a little while diligently cover up their Eggs with straw. With what courage and magnanimity do even the most cowardly birds defend their Eggs, which sometimes are subventaneous and addle, or not their own, or even artificial ones? Stupendous in truth is the love of birds to a dull and lifeless Egg, and which is not likely with the least profit or pleasure to recompense so great pains and care. Who can but admire that passionate affection or rather fury of a cackling Hen, which cannot be extinguished unless she be drenched in cold water? During this impetus of mind, she neglects all things, and as if she were in a frenzy, lets down her Wings, and bristles up her Feathers, and walks up and down restless and querulous, puts other Hens off their Nests, searching every where for Eggs to sit upon; neither doth she give over till she hath either found Eggs to sit, or Chickens to bring up: which she doth with wonderful zeal and passion, call together, cherish, feed, and defend. What a pretty ridiculous spectacle is it, to see a Hen following a bastard brood of young Ducklings (which she hath hatched for her own) swimming in the water? How she often compasses the place, sometimes venturing in, not without danger, as far as she can wade, and calls upon them, using all her art and industry to allure them to her.

Birds come to their growth sooner than Quadrupeds.

Birds very ingenious.

All Birds in coupling and breeding time are most loquacious and canorous. Birds grow much faster, and sooner attain their just magnitude than Quadrupeds. Those that are fed by the old ones with meat put into their mouths, in a month or six weeks space almost all of them, and some in much less time become fit to fly, and attain to very near the measure of bigness due to their kind. All of them in six months come to their full growth and perfection. Neither yet is this in them, as in Quadrupeds, a sign of short life.

Many Birds are very ingenious and docile, as may appear from that they are so easily taught to imitate mans voice, and speak articulately: which no Quadruped (for ought I have heard or read) could ever be brought to; though their Organs seem to be much fitter for that purpose, as being much more conformable to mans.

CHAP. VI.

Containing some particulars which Mr. Willughby propounded to himself to enquire out, observe, and experiment in Birds.

1. Whether Rapacious diurnal Birds only have the upper Chap of their Bills covered as far as the nostrils with a naked skin, which our Falconers call the *Sear*?

2. Whether the *Parrot* only moves the upper Chap? as *Aldrovandus* affirms; and whether the *Cross-bill*, which doth in like manner make use of her Bill for climbing, and some other birds, do not so too?

3. Whether any Birds change their Bills and Claws, as is reported of the *Eagle*?
Answer. What is reported of the *Eagle* in this kind I doubt not but it is false. Neither do I think that any bird casts its Bill by age. Wherefore that Translation of the fifth verse of *Psalms* 103. which in the common English metre runs thus, *Like as the Eagle casts her bill, whereby her age reneweth*, ought to be mended. For many of the more ignorant sort have hereby been imposed upon, believing there to be the words or sense of the Scripture in this place; whereas there is no such thing in the Text mentioned as the *Eagle* casting her Bill; the words being only these, *Thy youth shall be renewed like the Eagles*. But that the hook of the Bill may, and sometimes doth, in *Eagles* and other birds by extreme old age grow so immoderately, as to hinder their feeding, I deny not. For the *Goldfinch*, we mentioned before, is heretofore a sufficient instance.

4. How many Birds have an angular Appendix, as it were a Tooth, on each side the upper Chap of their Bills, as the *Kestrel*, the *Hobby*, the *Butcher-bird*, &c?

5. The Commixture of the legs or tines of the lower Mandible, in what birds it is round, in what angular?

6. Whether the Eyes of all Birds of the same Species are always of the same colour?

Answer. The *Irides* of the Eyes in young and old birds do often differ; and sometimes also in the Cocks and Hens. But whether in old birds of the same Sex they differ or not remains to be enquired: I suppose they do not.

7. Whether in Birds that want the Crop, that defect be always supplied by the largeness of the Gullet? Which (as we said) in many birds of this kind immediately above the stomach is dilated into a kind of bag or *ante-stomach*.

8. Whereas the single blind gut, situate about the middle of the guts, is nothing else but the passage deriving the Yolk into the guts contracted; it were worthy enquiry, whether there be not some external passage terminated in the blind guts commonly known and so called, as well in Beasts as in Birds; And seeing that in many birds the ** Appendices* are very small, and seem to be of no use to the birds when grown up, let it be enquired whether they are greater in *Embryon-birds*, and what use they may be good to them?

* i.e. The blind guts.

9. Whether the single blind gut forementioned be always reflected toward the tail? In what birds the ends of the ** Appendices* are reflected? In what birds the ** Appendices* are triate? Whether below the ** Appendices* the gut be proportionably larger than above, according to the bigness of the ** Appendices*? Whether of the ** Appendices* the one is usually shorter than the other? And if so, whether the right or the left?

10. Whether some Birds have a double cluster of Eggs, as viviparous Animals have two *Ovaria*, usually called and mistaken for Testicles? or whether all have only a single one?

11. Whether Birds when ready to lay can detain their Eggs, if their nests happen not to be ready, or be by any accident destroyed? Or whether they sometimes fall from them against their wills?

12. Whereas some Birds, for example *Pigeons*, lay only two Eggs at a time, whether of the one of those is always bred a Cock, of the other a Hen-bird?

Answer. It doth most commonly so fall out, yet sometimes two Males, sometimes two Females are excluded together.

13. To make trial whether Eggs in *England* may be hatched by an artificial heat.

14. To observe what colours are most frequent in Birds, and in what parts; as for example, the rumps of many birds are of the same colour, viz. *Larks, Thrushes, Sparrows*, &c.

15. What Birds wag their tails oft, as *Water-magtails, Blackbirds, Morebents, Tringæ*, &c. One of the two middle feathers of the tail when it is closed covers the other, enquire whether the right or left feather lies off next uppermost, or either of them indifferently, as it happens.

16. In what kind of Birds there are more Cocks usually bred, as in *Ruffs*; in what more Hens, as in *Poultry*?

17. What Birds build upon the ground, as all of the *Poultry* kind, *Lapwings*, and in general all such as run and feed themselves so soon as they are hatcht, being covered with a thick down? What build on trees and in hedges, as the greatest part of Birds? What in the water, as *Morebents*? What Birds sit always on the ground, never lighting upon trees? What perch upon trees?

18. What Birds hide themselves or change places, whether in Winter or in Summer?

19. What would become of *Nightingales, Cuckoos*, &c. in Winter; and of *Field-farces*, &c. in Summer, if they were kept in Cages, and carefully tended, fed and cherished?

20. How cometh it to pass that the most vehement cold in Winter-time, if they have but food enough, doth not congeal or mortify the tender bodies of small birds?

21. Whether the age of *Pheasants, Hawks*, &c. may be known by the cross bars in their tails?

22. How many Birds have white feathers under their tails? How many have bristles under their chin, at the corners of their mouths, or about their nostrils?

23. What Birds, either terrestrial, or aquatic, have two cross lines in their wings?

24. How many Birds have the exterior vanes of their flag-feathers broader than the interior?

CHAP. VII.

Of some remarkable Isles, Cliffs, and Rocks about England, where Sea-fowl do yearly build and breed in great numbers.

Many Water but especially Sea-fowl do yearly breed and bring forth young in great companies, either in high Rocks, or Desert, and less inhabited Islands in the Sea, or on high and steep Cliffs by the Sea-side. The more noted and famous places of this kind about England are,

The Basse.

1. The *Basse* Island in the great Bay called *Edinburgh-Frith* or *Forth*, not far from the shore: which Dr. Harvey doth not less truly than elegantly describe in these words: There is a little Island, the Scots call it *Basse*, standing very high, environed with steep and craggy Cliffs (one might more truly and properly call it a huge Rock than an Island) not much more than a mile in compass. In the months of May and June the surface of this Island is almost wholly covered with Nests, Eggs, and young Birds; so that for the multitude of them one can scarce any where freely set ones foot: and such a number of the Birds there is flying over ones head, that like Clouds they cover the Skie, and take away the sight of the Sun: making such a noise and din with their cries that people talking together near hand can scarce hear one another. If from thence as from a lofty Tower, or high Precipice you look down upon the Sea underneath, you shall see it every way covered with an infinite number of Birds of divers sorts swimming up and down, intent upon their prey: in like manner as Pools of water in some places in the Spring time are seen, over-spread with Frogs: or the open hills and steep mountains are beheld at a distance, thick set, and as it were clothed with flocks of Sheep and Goats. If you list to sail about the Island, and from below look up the Cliffs as it were over-hanging your head, you might see on all the shelves and ledges of the Rocks and craggy Cliffs innumerable rows of birds of all sorts and magnitudes, more in number than the Stars that appear in a clear and moonless night. If you look at them that are coming to the Island, or flying away at a distance, you would take them to be huge swarms of Bees. Thus far Dr. Harvey. But I suppose he was mistaken in

in that he writes that the Lord of the Island makes some profit yearly of the reliques of the Nests useful for fuel. For these kinds of Birds do not make their Nests of straws, sticks, or such like combustible matter, good for fuel; but either lay their Eggs on the naked rocks, or spread under them very few straws, bents, or such like inconsiderable stuff.

The Birds that chiefly frequent this Island that they may breed there are 1. *Soland Gulls*, which are proper to the *Basse*, not breeding elsewhere about *Britain*, that we know of. When we were there near *Mid-Angus*, all the other Birds were departed, only the *Soland Gulls* remained upon the Island, their young being not yet fully grown and fledg'd. The manner of getting them is by letting down a man in a basket by a rope from the top of the Cliff, who gathers the young off the ledges of the Rocks, as they let him down or draw him up. 2. The *Turtle-Dove*, or *Sea-Turtle*, so called here (as I suppose) from some similitude it hath to the *Turtle-dove*. It is a whole-footed bird, and, I suspect, the same that we have described under the title of the *Greenland-dove*. This also is a bird peculiar to this Island. 3. The *Soot*, which is either the *Lomvia*, or the *Alka* of *Hoivius*: though we believe that both these Species breed here. These are found also in many other places about *England*. 4. The *Scarf*, which from the agreement of the name with the Dutch *Scharppf*, I take to be the *Cormorant*. 5. The *Cattinick*, a sort of small *Sea-gull*, besides many other Species of Gulls.

2. The *Farn Islands* near a Village in the Coast of *Northumberland* called *Bambergh*, famous for an ancient Castle built on a Rock, now almost ruined. The Birds which chiefly frequent and build upon these Islands in Summer time are 1. *St. Cutberts Duck*, called by *Wormius*, as I suppose, *Eider*. This is never seen but in breeding time, and as soon as her young ones are hatcht takes them to Sea, and never looks at land till breeding time next. It is proper to these Islands, and breeds no where else about *England*, that we know of. 2. *Guillemots* or *Sea-hens*, i. e. *Lomvia* of *Hoivius*. 3. The *Skent*, i. e. *Alka* of *Hoivius*. 4. *Counter-nebs* or *Conter-nebs*, i. e. *Alka* of *Hoivius*. 5. *Scarfs*, i. e. *Cormorants*, or perhaps *Shags*. 6. *Puffins*, which the name argues to be *Puffins*: but the description here given us of them (for we saw not the bird) agrees rather to the *Basse-Turtle*. 7. Several sorts of Gulls, viz. 1. *Mire-crows*, all white-bodied, only having black heads, and somewhat bigger than Pigeons; by which description we conclude them to be *Pewits*. 2. *Annets*, small white Gulls, having only the tips of their Wings black; and the Bill yellow, perhaps the *black-footed Gull*. 3. *Pickwires*, or *Sea-Swallows*. 5. *Terns*, the least sort of Gull, having a forked tail. 8. *Sea-Pies*, i. e. *Sea-pies*, *Hematopus* *Beltonii*.

3. The *Sea-cliffs* about *Scarborough*, from which were sent us, the *Anates* *Arctica* of *Clusius*, called here *Mullets*. 2. The *Alka* of *Hoivius*, known here by the same name of *Auks*. 3. The *Lomvia* of the same *Hoivius*, named *Skents*. Besides doubtless there breed many Gulls among these fowl.

4. A noted Island not far from *Lancaster*, called the *Pile of Fondres*: which great flocks of divers sorts of Sea-fowl do yearly frequent, and breed there.

5. The *Isle of Man* with a little adjacent Islet, called the *Calf of Man*, in which besides *Mullets*, *Razor-bills*, and *Guillemots*, *English Puffins* build in great numbers, and no where else about *England* (that I know of) but in the *Silly* Islands.

6. *Prestholm*, a small uninhabited Island near *Beaumaris* in the *Isle of Anglesey*, belonging to my Lord *Bulkeley*. On this Island build the *Anates* *Arctica* of *Clusius* (here called *Puffins*) *Razor-bills*, *Guillemots*, *Cormorants*, and divers sorts of Gulls.

7. *Bardsey Island*, situate at the utmost Angle or Promontory of *Carmarthen-shire* in *Wales*.

8. *Lundy Island* in the *Severn-Sea*.

9. The Cliffs by the Sea-side near *Tenby* in *Wales*.

10. *Godrevy*, an Island or rather a Rock, not far from *St. Ives* in *Cornwall*, where *Auks* and *Guillemots*, here called *Murres* and *Kiddaws*, breed.

11. The *Silly* Islands, in the main Sea, about thirty miles distant from the *Lands end* in *Cornwall* to the West.

12. *Caldey Island* near *Tenby* in *Pembroke-shire*, in one part whereof we saw Gulls: Nests lying so thick, that we could scarce take a step without setting our feet upon one.

13. The *Isle of Eryn* near *Guernsey*.

CHAP. VIII.

Of the Division of Birds.

Birds in general may be divided into *Terrestrial* and *Aquatic*, or *Land* and *Water-fowl*. *Terrestrial* are such as seldom frequent waters, but for the most part seek their food on dry land.

Aquatic are such as are much conversant in or about waters, and for the most part seek their food in watery places; of which we will treat *Book III*.

Terrestrial Birds are either such as have *crooked Beaks* and *Talons*, called by the *Grecians* *Tau-á-vvovs*, or such as have more *straight Bills* and *Claws*.

Those that have *crooked Bills* and *Claws*, called *Tau-á-vvovs*, are either *Rapacious* and *carnivorous*, such as we call *Birds of prey*, or more *gentle* and *frugivorous*, as *Parrots*.

Rapacious and *carnivorous* are either *Diurnal*, such as prey by day-light, or *Nocturnal*, such as prey by night.

Rapacious diurnal Birds are usually divided according to their magnitude into the *greater* and *lesser* kind.

The *greater* kind are either the *more generous*, which have their Beaks hooked almost from the root, and are called *Eagles*, or the *sunguish* and *less generous*, having their Beaks freight for a good space from the root, and hooked only toward the point, called *Vultures*.

The *lesser* kind, called in Latine *Accipitres*, may be again subdivided into the *more generous*, which are usually reclaimed and trained up for fowling, properly called *Hawks*; and the *more cowardly* or *less generous*, such as are neglected by *Falconers*, as being of no use for fowling; and therefore permitted to live at large, which may be called *wild Hawks*.

Hawks properly so called are divided by *Falconers* into *long-winged* and *short-winged*.

Long-winged Hawks are such the tips of whose wings when closed reach almost to the end of the train: *Short-winged* are such the tips of whose wings when shut or withdrawn fall much short of the end of the train.

Birds that have *more straight* bills and claws are either the *greater* or the *lesser*, which we call *small birds*. Under the title of *greater* we comprehend all that do exceed or equal the common *Thrush* or *Mavis* in bigness. Yet to some kinds of bigger Birds (as for example *Woodpeckers*) by reason of the agreement of the characteristic notes we are forced to add one or two Birds lesser than *Thrushes*. The *greater* are either such as have *large, strong, straight, and long Bills*, or *lesser and shorter ones*. The first are either such as feed promiscuously upon *Flesh*, *Insects* and *fruit* (or grain) or as eat *Insects* and *fruit*; or such as feed upon *Insects* only. Those in respect of colour may be divided into two kinds, viz. 1. The *Crow-kind*, whose body is for the most part of one colour and black: 2. The *Pie-kind*, whose body is covered with party-coloured feathers. Of these, [that feed only on *Insects*] there is but one kind, v. g. *Woodpeckers*. Such as have *lesser and shorter bills* may be distinguished by the colour of their flesh, into such as have *white flesh*, and such as have *black flesh*. Those that have *white flesh* are the *Poultry kind*, *Hens*, *Peacocks*, *Turkeys*, &c. Those that have *black flesh* are either the *greater*, that lay but two Eggs at a time, as *Pigeons*; or the *lesser*, which lay more than two Eggs at once, as *The Thrush kind*. The lesser sort of Birds with *straighter bills*, such as we usually call *small birds*, may be divided according to their Bills, into such as have *slender bills*, and such as have *thick and short bills*. Of both kinds there be many subalternate species; of which when we come to treat of *small Birds*.

CHAP.

CHAP. IX.

A Catalogue of English Birds, as well of such as abide here all the year, and never change place, as of such, which at set times come and go, which we call Birds of passage.

RAPACIOUS DIURNAL BIRDS.

THE *EAGLE*, which doth not only come over hither to prey, but also many times builds and breeds with us yearly (they lay) upon the high rocks of *Shawdon* in *Carnarvonshire*. In the year of our Lord 1668. in the Woodlands, near the River *Derwent* in the *Peak* of *Derbyshire* was found an *Eagles Nest*, made of great sticks, resting one end on the ledge of a Rock, the other on two Birch-trees, upon which was a layer of Rushes, and over them a layer of Heath, and upon the Heath Rushes again; upon which lay one young one and an addle Egg, and by them a *Lamb* and a *Hare*, and three *Heath-poults*. The Nest was about two yards square, and had no hollow in it. The young Eagle was as black as a *Hobby*, of the shape of a *Goshawk*, of almost the weight of a *Goose*, rough-footed, or feathered down to the foot, having a white ring about the tail. I suppose this was of the same kind with those kept in the *Tower of London*, which we have described under the title of *The Golden Eagle with a white ring about its tail*.

The *SEA-EAGLE* or *Offspring*, *Haliastur* five *Offspring*, which preys often upon our Rivers. There is an aery of them in *Whinfield-Park Westmerland*, preserved carefully by the *Countess of Penbrooke*: but the report of their having one web'd foot is fabulous. Mr. *Johnson*.

The *FALCON*, *Falco*, is found to build in *Scotland*. We have been told that there is an Aery of them near *Holy-head* in the Isle of *Anglesey* in *Wales*.

The *Common Buzzer*, *Buteo* five *Triorches*. This Bird is a great destroyer of *Conies*.

The *HONEY-BUZZARD*, *Buteo* apivorus five *vespivorus*. This is like the precedent, differs in that it hath an ash-coloured ring or broad bar cross the train and wings.

The *BALD BUZZARD*, *Balbustardus Anglorum*, *Haliastur* Aldrov. This is by some called the *Sea-Eagle*, and preys upon fish.

The *MOOR-BUZZARD*, *Milvus Heringius*, Aldrov. This is known by being all over of a dark fulvous or Chestnut colour, except the crown of the head, which is of a pale clay colour.

The *KITE* or *Glead*, *Milvus*. The Characteristic note whereof is its forked tail, wherein it differs from all other rapacious Birds that we have seen.

The *RING-TAIL*, *Pygargus Accipiter*, *Subuteo Turneri*, the Male whereof is called the *Her-barrier*, from preying upon Hens. He doth (saith *Turner*) on a sudden strike at Birds in the fields, or Pullen in Towns, and missing of his prey departs slyly and silently, never making a second attempt; of all Birds of prey flying nearest the ground. *Gesner* suspects this Fowl to be the *Circus* of the Ancients.

The *SPARROW HAWK*, *Accipiter Fringillarius* *Recentiorum Nisus* & *Sparverius*. The Male or Tarcel of this is called a *Musket* after the *French* name. This is a great destroyer of Pigeons, too frequent with us.

The *HOBBOY*, *Subuteo Bellonii* & Aldrov. This from persecuting of *Larks* (which are its chief and particular game) is not unfitly by Mr. *Johnson* entituled *Accipiter Alaudarius*.

The *KESTREL*, *Stammel*, or *Stonegal*, and in some places the *Windhover*, because it doth as it were fan the wind by the motion of its wings, hovering in the same place: Hence the *Germans* also call it *Wannenmacher*, that is, the *Wind-fanner*. *Tinnunculus* five *Conchris*.

The *greater BUTCHER-BIRD* or *Mattageffe*, and in the *Peak* of *Derbyshire* after the *German* name *Wierangel*, or *Werangel*, *Lanius cinereus major*. This our *Falconers* sometimes reclaim, and train up for small Birds. She sits upon a high bough, making an uncouth noise; the Birds thereby allured become her prey.

The *WOOD-CHAT*, *Lanius minor cinereo-rufus*.

The *lesser reddish BUTCHER-BIRD*, *Lanius minor rubescens*. This Bird having

having no particular English name, that we know of, we have imposed this upon it. These Birds are called also in *Latine Colluriones*, and in English by Dr. Turner, *Shrikes*. It is common to all these *Butcher-Birds* to have black bristles about their bills.

The CUCKOO, *Cuculus*. Who because he preys only upon the Eggs of Birds, (and is therefore pursued, not attended, as is said, by the *Moor-titling*) or their young ones in the Nest, hath small and weaker Beak and Talons, and therefore disappears in Winter, when such food is not to be had. I have known one kept with all imaginable care, but (whether through alteration of food, or some other cause) before Winter, she grew torpid, broke out in scabs, and died. The young one is curiously spotted. I have seen one in Harvest partly spotted, partly cinereous. Mr. Johnson.

RAPACIOUS NOCTURNAL BIRDS.

The HORN-OWL, *Otus seu Noctua aurita*, called also by the Latines *Asio* according to *Pliny*.

The Common WHITE OWL, or Barn-Owl; this Mr. Johnson calls the Church-Owl, by which name the *Low Dutch* also call a sort of Owl.

The BROWN or IVY-OWL, and from its screeking noise the SCREECH-OWL. *Strix* Aldrov.

The GREY OWL, as big as the former. Dr. Charleton in his *Onomasticon Zoicon* attributes the English name *Gill-booter* to this Bird, which is, I suppose, a general name of all Owls.

The FERN OWL, or Churn-Owl, or Goat-sucker. *Caprimulgus*. In the mountainous woods in the Peak of Derbyshire, the West Riding of Yorkshire, in Shropshire, and many other places, all over England.

THE CROW KIND.

The RAVEN, *Corvus*. This often destroys young Lambs, first picking out their eyes; is of very quick sent, and by some trained up as a Hawk for fowling.

The Common or Carrion CROW. This is not much more than half so big as the former, otherwise very like it. It feeds upon flesh and dead carcases, in want whereof it will eat corn.

The ROOK, *Cornix frugilega*. It is distinguished from the Crow, to which otherwise it is very like, by its white beak and being gregarious, besides other notes * afterwards to be mentioned.

The ROYSTON CROW, *Cornix cinerea frugilega*. Common in Cambridgeshire, about Newmarket and Royston. Mr. Johnson calls it the Sea-Crow and saith it is frequent about Stockton in the Bishoprick of Durham, near the mouth of the River Tees.

The JACK-AW, *Monedula* live *Lupus* Aldrov. This also feeds promiscuously upon flesh, corn, seeds, insects, &c. In the stomach of a young one taken out of the nest, besides several sorts of insects, we found among divers other seeds many grains of Wheat, Rye, &c.

The CORNISH CHOUGH, *Coracias*, called also *Pyrrhocorax*, though *Aldrovandus* would have these to be distinct Birds. It is found not only in Cornwall, but also all along the West coast of Wales.

The PIE, Magpie, or Piannet, *Pica varia seu caudata*, called also simply *Pica*.

The JAY, *Pica glandaria*. This Bird is very greedy of Cherries, he feeds also upon Mast, as the Latine name imports.

THE WOODPECKER-KIND.

The GREEN WOODPECKER, or Woodspite, *Picus viridis*. This Bird is by some called a *Heyboe*, which name is, I suppose, corrupted from *Hewhole*, as Turner saith it was called in English in his time, and Mr. Johnson now. By others it is called *Rain-fowl*, because its cry when more frequent and shrill than ordinary is thought a Prognostic of rain.

The GREATER SPOTTED WOODPECKER, or Whitwall, *Picus varius major*.

The

The LESSER SPOTTED WOODPECKER, or Witwall, or Hickwall. *Picus varius minor*. I suppose *Witwall* is a name common to both Species.

The WRYNECK, *Jynx seu Torquilla*. This agrees with the forementioned Woodpeckers in the disposition of the toes and fabric of its tongue: It differs from them 1. In having a slenderer and weaker bill: So that it hews not for it self a hole in the solid Wood, but builds in rotten and hollow trees. 2. In having its tail not so stiff.

The NUTHATCH, or Nut-jobber. *Picus cinereus*. She hath not a long tongue as the other, because she feeds not on *Cossi* as they do, but on other Insects, and especially on Nut-kernels. It is a pretty sight to see her fetch a Nut out of her hoard, place it in a chink, and then stand over it with her head downward, strike it with all her might, and breaking the shell catch up the Kernel. The feathers of her tail are not stiff and pointed, because her motion is rather down than up trees: nor hath she two hind-toes: but the inner toe is separated a little from the middle, and falls somewhat across (as in the Owl-kind) whereby she can support her self in any motion. Her voice is very shrill. Mr. Johnson.

The CREEPER, or Ox-eye-Creeper, *Certhia*. It hath a long slender Bill, bending like a Bow, more commodiously to reach into the chinks of the bark of trees.

The HOOP, or Hoopoe, *Upupa, Epops*. Why we subjoin this Bird to the Woodpeckers shall be said when we come particularly to treat of it. This is sufficiently differenced from all other Birds by its crest all along the head; it is more rare with us.

THE POULTRY KIND.

The HOUSE COCK, Roost-Cock, or Common Dunghill Cock and Hen, *Gallus Galinaceus & Gallina domestica*. Of these there are several species or varieties, which we shall enumerate afterwards.

The PEACOCK, *Pavo*, both the common, and the white.

The TURKEY, *Gallopavo seu Avis Numidica & Meleagris*. Neither Turkeys nor Peacocks are native of England, but because they are tame fowl, and easily bear our Winters, and it is now a long time that they have been brought over, we may very well reckon them among English birds.

The COCK of the WOOD or Mountain, *Urogallus seu Tetrao major*. Aldrov. This is not found in England, but in Ireland thereof.

The BLACK COCK, his Hen the Grey hen; his Brood the Grey Game. This Bird is called also the Heath-Cock, and Grouse, *Tetrao, seu Urogallus minor*. In great Heaths in many places of England.

The RED GAME, *Lagopus altera* Plinii, an Attagen Aldrov. In the North of England it is called, The Gor-Cock and Moor-Cock, the Hen the More-hen, the Brood Gor-jowl. Heath-Cock is also a name common to this with the precedent. Turners More-hen is the Female of the precedent or Black Cock. Gor in the North of England signifies red, so the Gor-Cock is the red Cock, &c. For the understanding and exact distinction of these names we are beholden to Mr. Johnson of *Brigantia* in Yorkshire.

The PHEASANT, *Phasianus*: a bird well known, and for the beauty of its colours comparable to the Peacock.

The Common PARTRIDGE, *Perdix cinerea*. We have been informed that the Red-leg'd Partridge, *Perdix rustica* is found in the Isles of Jersey and Guernsey.

The QUAIL, *Coturnix*.

The RAIL or Daker-hen, *Oryzometra*, Aldrov. *seu Rallus terrestris*. This is very common in Ireland, but more rare with us. Turner saith he never saw nor heard of it but in Northumberland.

THE PIGEON KIND.

The Common WILD PIGEON, or House-Dove, or Culver, *Columba domestica seu vulgaris*.

The ROCK-PIGEON, *Columba rupicola*; ash-coloured, with red legs, of small size, observed by Mr. Johnson.

The RING-DOVE, or Quess, in the North of England *Cushat*, *Palmus torquatus*.

The

* In the Chapter of the Rook.

6. The GODWIT, in the Ile of Ely and elsewhere the *Tarwip* or *Tarnhelp*. *Fedoa*, Gefn. *Barge fortè Bellonii*.

7. TOTAUS, *Aldrov*. I have not as yet heard of any English name of this; I suppose our Countrymen confound these Species, calling both by the same name, for their great likeness.

8. The STONE-POLOVER, *Fedoa nostra tertia*. This Bird we saw in Cornwall.

9. The SEA-PIE, *Hæmatopus*, Bellonii. *Pica marina*, Gefn.

2. With middle-sized Bills.

1. The RUFFE, *Avia pugnax*; The female of this is called the *Reeve*. These Birds differ wonderfully in colours, so that scarce can there be found any two alike.

2. The REDSHANK, or *Pool-Snipe*, Totanus, Gefn. & *Gallinula Erythropus major ejusdem*.

3. The KNOT, that is King Knout or Knute [Canutus] his bird. *Cinclus Bellonii*, an *Callidus cinerea*?

4. The SANDERLING, or *Curwillet*, *Arenaria nostra*. It is of the bigness of the lesser *Tringa*, and wants the back-toe. This Sir T.B. calls the Sea-Dottrel,

5. The GREATER TRINGA.

6. The SANDPIPER, *Tringa minor*, the Oxeye in Suffex.

7. The STINT, *Alauda marina*, about Chester called a *Purre*.

8. To these may be added (though it hath short legs, and wades not in water) the KINGFISHER, *Ipida*.

3. With short Bills.

1. The LAPWING, called in some places the *Bastard-Plover*, in the North, in imitation of its note or voice, the *Tewit*. *Capella* sive *Vannellus*.

2. The GREEN PLOVER, *Pluvialis viridis*, called also *Pardalus*, because spotted almost like a *Leopard*.

3. The GREY PLOVER, *Pluvialis cinerea*.

4. The STONE-CURLEW, *Oedienemus*, Bellonii.

5. The DOTTREL, *Marinellus*.

6. The SEA-LARK, *Charadrius sive Hiaticula*. These three last named Birds do all want the back-toe.

7. The TURNSTONE, *Cinclus, Turneri fortè*. This Bird we found on the Sea-coast of Cornwall, It is bigger than a Blackbird, and lesser than a Plover.

WATER FOWL THAT SWIM.

I. CLOVEN-FOOTED, some of which may be called FIN-TOED, because they have lateral appendant membranes on each side their toes.

1. The CRESTED DIVER, *Colymbus cristatus*.

2. The ASH-COLOURED DIVER, *Colymbus cinereus major*.

3. The DIDAPPER, *Dobchick*, or *Doncker*, *Colymbus minor*.

4. The GREATEST DIVER, or *Loon*, *Colymbus maximus*. This Bird is whole-footed, but for its perfect agreement with the rest of the *Colymbi* we have subjoined it to them. All these Birds are also called *Loons* and *Arseet*, from the situation of their legs, just behind.

5. The Common WATER-HEN, or *Morehen*, *Gallinula Chloropus*. This and the following Bird run swiftly.

6. The WATER-RAIL, *Rallus aquaticus*.

7. The COOT, or *Bell-Coot*, *Fulica*.

II. WHOLE-FOOTED BIRDS, and first,

1. Such as have but three toes.

1. The COULTER-NEB, *Pope*, *Mullet*, and in some places the *Puffin*. *Anas Arctica Cluj*. *Fratercula quorundam*.

2. The

2. The RAZOR-BILL, *Ank* or *Murre*. *Alca Hoieri*.

3. The GUILLIAN, or *Guillemot*, *Sea-ben*, or *Kiddam*, *Lamnia Hoieri*.

4. The SEA-TURTLE, *Turtur marinus Bassanus*. We suppose this Turtle Dove of the *Baffe* Island wants the back toe, but are not thereof very confident, having never seen it.

2. Such as have four toes all web'd together.

1. The SOLAND-GOOSE, *Anser Bassanus*.

2. The CORMORANT, *Corvus aquaticus sive Carbo*.

3. The SHAG, and in the North Country the *Crane*, *Graculus palmpes*.

These have all their toes web'd together for more swift and speedy swimming, the claw of their middle toe ferrate, for to hold fish.

3. Such as have four toes, but the hind one separate; And first,

1. Such as have narrow and sharp-pointed Bills.

1. The great BLACK AND WHITE GULL, *Larus maximus ex albo & nigro varius*. This is almost as big as a Goose. I saw and described it at Chester.

2. The HERRING-GULL, or greatest ash-coloured Gull; called corruptly, the *White Gull*; *Larus cinereus maximus*. It is as big as a Duck, with an ash-coloured back.

3. The Common SEA-MALL, *Larus cinereus minor*; as big as a Pigeon, with an ash-coloured back.

4. The GREY GULL, perchance the Cornith *Wagel*, *Larus griseus*: called in Holland the Burgomaster of Groeland.

5. The Cornish TARROCK, *Larus cinereus Bellonii*. It wants the back toe, instead thereof having only a small protuberancy.

6. The PEWIT, or *Black-cap*, *Cephus*, Turneri & Gefn.

7. The WINTER MEW, or *Coddy-Moddy*, *Larus fuscus sive hybernus*.

8. The SEA-SWALLOW, *Hirundo marina*.

9. The LESSER SEA-SWALLOW, *Larus piscator*, Gefn. & Aldrov.

10. The SCARE-CROW, *Larus niger*, Gefn.

11. The BLACK CLOVEN-FOOTED GULL, *Larus niger fidiipes nofter*.

12. The BROWN TERN, *Larus Sterna fulca ditius*.

Besides these Mr. Johnson shew'd me another small bird of this kind, which he called *Larus fidiipes alter*: which I then took to belong to the *Water-ben-kind*, but by his description of it since sent me, I now rather incline to his opinion, that it is a *Larus*, or small Gull.

The GANNET, *Catarractes nofter*, the *Skua* of Hoieri, A Cornish bird.

To these may be added the PUFFIN, or *Curviere*, *Puffinus Anglorum*. On the Calf of Man, and the SILLY Islands.

2. Such as have narrow, ferrate, or toothed Bills.

1. The GOSSANDER, or *Bergander*, *Merganser*, Aldrov. The female of this (mistaken for a distinct sort) is called the *Dim Diver*, or *Sparling-fowl*.

2. The Lesser TOOTH-BILL'D DIVER, *Mergus cinereus fuscus*.

3. The WHITE NUN, *Albellus alter*, Aldrov. The Female of this is also mistaken for a different kind, and called *Mergus Glacialis*, which Mr. Johnson Englishes the *Lough Diver*. The Male and Female in this and the precedent differ so much in colour that they have been even by the best Naturalists described and figured for diverse Species. I had the Female of this latter lately sent me from Cambridge, by the title of a *Swem*. I suppose the name is originally *High Dutch*; for I find in *Baltner* our common *Wiggon* intitled *Ein Schwy*.

4. SUCH AS HAVE BROAD BILLS, and first,

1. The Goose-kind.

1. The SWAN, *Cygnus*, *Olor*.

E 2

2. The

2. The ELK, Hooper, or Wild Swan. *Cygnus ferus*.
3. The TAME GOOSE, *Anser*.
4. The WILD GOOSE, *Anser ferus*.
5. The SWAN-GOOSE, *Anser Guineus*: notable for her lifted neck, girdled breast, crested head, and knobbed forehead. This was brought over from abroad, but is now grown common enough with us; as the Turkey and Peacock also were, which we reckon among our Domestics.
6. The BERNACLE, or Clakie, *Bernicla sive Bernacula*.
7. The BRENT-GOOSE, *Brenta sive Bernicla altera*.
8. The RAT-GOOSE, or Road-Goose, *Bremba, Aristotelis fortè*.

2. The Duck-kind.

1. The SHELDRAKE, or Borough-Duck: *Tadorna Bellonii*. It is called *Sheldrake* from its being particoloured, *Sheld* signifying dappled or spotted with white; and *Burrow-duck* from building in *Coney-burrows*.
2. St. CUTBERTS DUCK, *Anas Farnensis*, building with us only on the *Farn* Islands. Itake it to be the same with the *Eider* of *Wormius*.
3. The SCAUP-DUCK, *Fuligula fortè* Gessneri; It is called *Scaup-duck* from its feeding upon *Scaup*, i. e. broken Shells: it varies infinitely in colour, especially in head and neck, so that among a pack of forty or fifty you shall not find two exactly alike. Mr. *Johnson*.
4. The BLACK DUCK, *Anas niger*, Aldrov. Seen with Mr. *Johnson*.
5. The SCOTER, or lesser black Diver, *Anas niger minor*.
6. The TUFTED DUCK, *Anas cirratus*. *Querquedula cristata sive Colymbis* Bellonii.
7. The GOLDEN-EYE, *Clangula*, Gessn. This was sent us from *Cambridge* by the title of *Shelden*, I suppose so denominated from its being particoloured of black and white, that is *Sheld*, so other pied birds are called *Sheld-fowl*.
8. The SHOVELER, *Anas Platyrhynchos altera sive clypeata Germanica*, Aldrov.
9. The LESSER RED-HEADED DUCK, *Anas fersa fusca seu capite rubro minor*.
10. The POCHARD, or great red-headed Duck, *Penelope veterum*, Aldrov. *Anas fersa fusca*, Rothsch, Gessn.
11. The Common WILD-DUCK, and Mallard, *Boschas major*.
12. The SEA-PHEASANT, *Anas caudacuta*.
13. The Common WIGEON, or Whewer. *Penelope*, Aldrov. I am informed by Mr. *Dent* Apothecary in *Cambridge*, that the Males or Cocks are there called *Wigeons* and the Females *Whewers*.
14. The GADWALL, or Grey. *Anas Platyrhynchos rostro nigro & plano*, Aldrov.
15. The Common TEAL, *Querquedula*.
16. The SUMMER TEAL, *Anas Circia*, Gessn.
17. The TAME DUCK, *Anas domestica*.
18. The MUSCOVY DUCK, *Anas moschata*.
19. The HOOK-BILD DUCK, *Anas rostro adunco*.

Among the whole-footed Water-fowl we omitted the *Recurvirostra* or *Avocetta Italorum*, which in Winter-time often frequents our coasts, the *Shear-water* of Sir *Thomas Brown*, and the *Mergulus melanoleucus rostro acuto brevi* of the same.

Among the cloven-footed Water-fowl the *Stork*, which is sometimes seen upon our Coasts, perhaps driven over by storm, or other Accident.

AN ADDITION To the FIRST BOOK of the ORNITHOLOGY OF FRANCIS WILLUGHBY Esq;

BEING

AN EPITOME of the ART of FOWLING,
Collected out of *Markham*, *Olin*, and others.



IN delivering the Art of Fowling, or taking of Birds, there are two methods that might be observed.

The first proceeding according to the Engines and devices that are made use of for taking them.

The second according to the several sorts of Birds to be taken.

In the first method might be first an enumeration made of the several Engines and Instruments, as Nets, Springs, and Snares, Traps and Pit-falls, Guns and Cross-bows, Bird-lime, Baits, and Animals, viz. Hawks, and Dogs. Then, going particularly over each Instrument or Engine, might be shewed, 1. The several sorts and fashions of each. 2. The various ways of using each sort. 3. What kind of birds are to be taken each way.

But I shall chuse rather to use the second method, following therein *Markham* in his Treatise on this Subject, intituled *Hungers prevention, or the Art of Fowling*, to whom I must profess my self beholden for the greater part of this Discourse, which I shall divide into two Sections; in the first treating concerning the taking of *Water-fowl*, in the second concerning the taking of *Land-fowl*: To which last I shall annex three Chapters: The first, concerning the making of Birdlime; The second, concerning the election and training up of a Setting-Dog; The third, containing an Abridgment of some Statutes relating to the preservation of Fowl.

SECTION I.

Of the taking of Water-Fowl.

CHAP. I.

How to take Water-Fowl with Nets.

§. I.

How to take Cloven-footed Water-Fowl with Nets.

MAKE your Net of the strongest and best-twined Pack-thread, with large meshes, at least two Inches from knot to knot: For the bigger the mesh, so the birds cannot creep through, the better. The Net must not be above two fathoms deep, and six long at the most: A Net of that size being as great as a man is well

well able to throw over. It must be verged with a strong cord on each side, and extended stiff upon a long Pole at each end: Then having observed the Morning and Evening-feeding of the Fowl (which is seldom in one and the same place) be sure to come two hours before those feeding times (which are twilight in the Morning, and after Sun-set at Night) and upon these haunts spread your Nets smooth and flat, staking down the two lower ends firm on the ground, so that they may only come and go, and no more. The upper verge of the Net must stand extended on the long Cord, the further end whereof must be staked down to the earth, two or three fathoms from the Net, (the Stake standing in a right line with the lower edge of the Net) the Fowler holding in his hand the other end (which should be at least ten or twelve fathom long) at its distance: where he shall make some artificial shelter of grass, fods, earth, or such like matter, where he may lie out of sight of the Fowl. Be sure that the Net lie so tuckle, that upon the least twitch it will rise from the earth, and fly over. Strow over the Net short dead fog and other grass to hide it as much as may be from the view of the Fowl. It would be of advantage, close to your Net to stake down a live *Heron*, or other Fowl you spread for, formerly taken, for a Stale, making her now and then flutter her wings. When you see a competent number of Fowl within the danger of your Net, draw your Cord suddenly and cover them. This you may do till the Sun be almost half an hour high, but no longer, for after that time no more Fowl will come to feed; and at Evening from Sun-set till the Stars begin to appear. Thus you may take not only the greater Water-fowl, but *Plover* and others.

§. II.

How to take whole-footed Water-fowl with Nets.

Make your Nets of the smallest and strongest Pack-thread; the Meshes of less compass than the forementioned; let them be $2\frac{1}{2}$ or 3 foot deep; for length according to the Rivers and Waters they are to be pitched over. Let them be lined on both sides with false Nets of strong Packthread, every Mesh being $1\frac{1}{2}$ foot square, that as the Fowl striketh either through or against them, the smaller Net may pass through the great Meshes, and so entangle them.

These Nets you shall pitch for the Evening-flight of Fowl before Sun-set, and stake them fast down on each side the River, the lower side of the Nets about half a foot within the water, the upper side shoaling slantwise against the water, yet not touching it by a foot and half at least. The strings that support this upper side must be fastened to small yielding sticks prick in the bank, which as the Fowl striketh may give liberty to the Net to run and entangle them: Yet one end ever made so fast that the Net may by no means be carried away. You may thus place divers of these Nets over the River about twelve score one from another.

If there be any Fens, Plashtes, or Pits at a good distance from the River, go to them, and shooting off a piece twice or thrice, raise the Fowl from thence, which will presently pack to the River, then plant your Nets of the middle size upon the small Plashtes and Pits, and the longest of all upon the Fens: In like manner if there be any covert of Sedge, Reeds, Rushes, &c. in the water, pitch Nets about them also.

In the Morning go first to the River about an hour or two before day, and see what your Nets have taken, and unlade them: Then if you find there be many Fowls upon the River, shoot off your Gun in one or two places, and that will quickly fend them to the Fens, Plashtes, and blank waters, whither you may repair about Sun-rising, and see what your Nets have taken there.

CHAP. II. §. I.

How to take Water-Fowl with limed strings.

After you have found and observed the haunts of the Fowl, provide a long line made of small cord, knotted here and there, and well limed over; and a burthen of little sticks, sharp at the nether end, and with a little fork at the upper. If it be for the Evening-flight, come to the place an hour before Sun-set; if

if for the Morning, at least two hours before day [observe the same times in going to prick down Lime-rods,] and prick them down a little flanting, so as they may be within a foot and half of the ground at the uttermost, in even rows all over the place of haunt, one row distant from another a yard or two, and one stick from the next in the same row four or five yards. Then lay the limed strings on the forks (some rows higher than others, like waves. Fasten the ends with a slipping loop, so that upon any violent strain the limed string may loosen and lap about any thing that toucheth it. And so you shall take a great number of Plover or other Fowl that fly in a broad Squadron, and swoop close by the ground a good distance before they light.

In like manner you may take whole-footed Water-fowl, liming your strings with strong and water-ried Lime, placing the strings over the Water as you did over the Land, only making your forked sticks so much the longer, observing never to lay them in the Moon-shine, but either in dark nights, or shady places. They may be placed either so near the water as almost to touch it, or higher, not exceeding a foot and half. These birds, though many times they fly in single files, yet when they come down, spread themselves so, as to alight all as it were together upon the water: And so by this Artifice they may be taken many together.

§. II.

How to take Water-fowl with Lime-twigs.

You must provide good store of rods; the best are small, long, straight twigs of Willow, cut of even length, less for small fowl, and greater for greater, yet all so light and slender, as to be apt to play and wind about any thing. The length must be fitted to the place where they are to be used. Smear above half their upper ends with Birdlime, and holding them to the fire make the Birdlime melt and run upon them, that the Rod may not be discerned from the Lime.

Then at the times before directed go to the haunts: And first in the very middle of the place pin down for a Stale a live-fowl of the same kind you lay for, yet so that the may have liberty of wing to flutter up and down at pleasure. Round the Stale every way, all the place over, prick down your Lime-rods in rows, at about a foot distance from each other, alllope, with their points bending to the wind, or crosswise, one to the wind, and one against it alternately, their tops being a foot from the ground or better. This done, place a Stale or two more aloof from the Lime-rods; and having found a fit place for your self to lie conceal'd in; with a small, long string fastened to each Stale, and running along the ground to you, when you see or hear any Fowl coming, stir the Stales, and make them flutter: and upon sight of them the Fowl will presently strike and swoop in among them, and so be entangled by the Rods.

You must have a well-taught Water-Spaniel to find and fetch such as flutter away and hide themselves.

Whole-tooted Water-fowl may in like manner be taken with rods smeared over with strong Water-lime, which no moisture or frost can injure. Prick these Rods in the water, the limed part being above water, [and amongst them stake down here and there a Stale,] all over any Fen or wadeable River, and also upon the dry banks and borders surrounding such Waters, so thick that a Fowl may not creep between them, fixing also a Stale or two there.

You need not wait continually on your Rods; only come first early in the Morning, secondly at Noon, thirdly, late at Night, always attended with your Spaniel, and take what you find: If any of your Rods be missing, employ your Spaniel for finding out the Fowl that carried them away, whether fluttered into the River, or crept into any holes of the Bank, Rushes, Sedge, or other Covert.

When your sport begins to decay, and the Game leaves the haunt, immediately find out a new haunt that is untroubled, and do as before directed; and after about a month's rest the first haunt will become as good as before.

For Wild-geese or Bernacle-geese of your greatest Rods upon green Winter corn, either Wheat or Rice, but especially Wheat, on which this sort of Fowl feed most earnestly. [The brownest Rods, and nearest the colour of the earth are best.] Set your Rods especially about and in the middle of the water-furrows. These are very shie Fowl, and therefore you must stand at a good distance upon some knob or higher ground;

ground; and when by fluttering of the Fowl touch'd, and sudden rising of the rest you perceive any are taken, make in and take them up; and if any half limed be flitting away, let your Dog fetch them.

It will not be amiss, if when you have placed your Rods, you beat the Fowl off from all other haunts, which will make them come the sooner to that where your Rods are placed.

* Out of the Epitome of Husbandry.

* *How to take Snipes with Water-Bird-lime.*

Take two or three hundred Birch-twigs, and lime forty or fifty of them together very well: Then finding out the haunt of *Snipes*, which you shall perceive by their Dung, and in very hard weather where the water lies open they will lie very thick. Then observing the place where they most feed, set two or three hundred of your twigs at a yard distance, and sloping some one way, some another. Retire two or three hundred paces from the place, and you shall find, that there shall not one Snipe in ten miss your twigs, by reason they spread their wings, and fetch a round clove to the ground before they alight. When you see any taken, stir not at first, for he will feed with the twigs under his wings, and as others come over the place he will be a cause to entice them. But when you see the coast clear, and but few that be not taken, go and take up your Birds, and fasten one or two, that the other flying over may come to the same place. If there be any other open places there by, put them off those haunts. They will lie where it is open and a Spring very much; for they can feed in no hard place by reason of their Bills. In a Snow you shall have them extraordinary thick upon such a place.

CHAP. III.

How to take Water-fowl with Springes and Snares.

HAVING found the haunts where these fowl do usually feed, and noted well the furrows and water-tracks where they commonly stalk and paddle to find worms, slote-grafs, roots and other such like things on which they feed, you shall mark where many furrows meet in one, and break out as it were in one narrow stream or passage, and so descending afterwards divide into other parts and branches, this middle part or core being the deepest, and as it were feeding the rest; then noting how every furrow breaketh and cometh in this Center or little Pit, you shall mark which is most padled with the Fowl: which found out and noted; you shall across all the other passages make as it were a Fence of small short sticks prickd down into the ground, at half an Inch distance, standing about an handful or somewhat more above water. The Fowl (such is their nature) will not preserve these Fences, but stray about till they find the open way, wherein they will run up swiftly, padding up and down for their victuals. This done, take a good stiff stick, cut flat on one side, and prick both ends down into the water or earth on one side the track, the bow running parallel to, and not crossing the track. Then you shall make a bow of small Hazle or Willow in the fashion of a Pear, [rather narrower] the one end running out as it were in a foot-stalk, longer or shorter, greater or smaller, according to the bigness of the Fowl you set for. This is to answer the bridge in a Moule-trap, and therefore we will call it the Bridge. Then take a good stiff young Plant of Hazel or Elm, rusby grown, and clean without knot, and having made the bottom end sharp, at the top you shall fasten a very strong Loop or Swickel of horse-hair. [This Loop is also to be made greater or lesser, of more or fewer horse-hairs, according to the bigness of the birds you set for] tied very fast together with strong Pack-thread, and made so smooth and yare that it will slip and run at pleasure. Hard by this Loop or Swickel shall there also be fastned, within an Inch and half of the end of the Plant a little broad thin Tricker, such as they use to set up Moule-traps with.

These things thus prepared, take your Loop of Hazel or Withy made Pear-wise, and laying it cross the track, hang the bowed end of it on a little Peg or Hook driven down into the ground on one side the track, the other end or stalk of it must be put underneath the bout of the first-mentioned bowed stick, and near the end of the stalk

stalk of it must be a nick cut in. Then having thrust down the sharpened end of the Hazel-plant fast into the ground on the bank or side of the track, bring the smaller end with the Loop and Tricker to the Bridge: Then put one end of the Tricker under the bout of the first mentioned stick, and the other end in the nick made in the stalk or end of the Bridge; this will keep the Hazel-plant bent down. Then lay the Loop of horse-hair upon the Bridge so conveniently wide, as that the Bird may tread in the middle of it upon the Bridge, which she shall no sooner do, but up will fly the end of the Hazel-plant, and the birds foot be caught in the noose or slipping Loop of horse-hair. This is somewhat difficult to clearly to express in words as that any man may readily understand and conceive it. *Markham's* description is so imperfect and obscure, that I could make nothing of it.

How to catch Woodcocks in Snares.

This Bird being wont to walk straight forwards in any furrows or tracks, the Fowls make little pads or walks for them in the places where they haunt, of a Palm broad, straight and equal, and in them set many Snares made of horse-hair such as are designed *Figure 2*. This bird being sufficiently simple, once got into one of these pads runs straight on from end to end without any heed-taking, and so is caught by the neck in some of these snares.

We in *England* are wont to make great Glades through thick Woods, and hang Nets across them: And so the Woodcocks shooting through these Glades, as their nature is, strike against the Nets, and are entangled in them.

CHAP. IV.

An approved way to take a Heron; out of the Epitome of the Art of Husbandry.

A Heron being as great a devourer of Fish as any is, I will affirm ten times as much as the *Otter*, and shall destroy a Pond more in one Week than an *Otter* shall do in three Months: For I have seen a *Heron* that hath been shot at a Pond to have seventeen Carps at once in his belly, which he will digest in six or seven hours, and to fishing again. I have seen a Carp taken out of a Herons belly nine Inches and an half long: Several Gentlemen that have kept them tame, have put fish in a Tub, and tried the Heron how many small Roches and Dace he would eat in a day, and they have found him to eat above fifty a day, one day with another. One Heron that haunts a Pond in a year shall destroy one thousand store-carps; nay, one thousand five hundred in half a year. Now the best way to take this great enemy of Fish is this: Having found his haunt, get three or four small Roches or Daces and having a strong Hook with a Wire to it, draw the Wire just within the skin of the fish, beginning without side of the Gills, and running it to the tail, and then the fish will lie live or six days alive: For if the fish be dead, the Heron will not touch him. Let not your Hook be too rank. Then having a strong Line made of Silk and Wire, about two yards and half long (if you twist not Wire with your Silk his sharp Bill will bite it in two immediately) and tie a round stone of about a pound weight to the Line, and lay three or four Hooks, and in two or three nights you shall not fail to have him if he comes to your Ponds. Lay not your Hooks in the deep water, where the Heron cannot wade to them; for if you do, they may lie long enough before you see any effect of your pains. Colour your Line of a dark green, for a Heron is a very subtle bird.

CHAP. V.

Of the Fowling-piece, and Stalking-horse.

The best Fowling-pieces are the long-barrelled [of five and a half or six foot] of an indifferent bore [somewhat under Harquebuse] for they hold the best charges, and carry the furthest level; and such as have Fire-locks. The charge must be round hail-shot, of bigness according to the Game you shoot at.

As near as you can shoot with the wind, and sideways of, or behind the Fowl: And if possible under the shelter of some hedge, bank, or tree, &c. sometimes (if need be) creeping on your hands and knees. Chuse rather to shoot at a rank or file than a single fowl; and then send your Dog for what you have stricken. You must have your Dog in such true obedience as not to stir from your heels till you bid him go.

Where you have no shelter use a Stalking-horse, which is any old Jade trained up for that purpose; which being stript naked, and having nothing but a string about the nether Chap, of two or three yards long, will gently, and as you have occasion to urge him, walk on the banks of Brooks and Rivers, or Meadows and Moors, or up and down in the water, which way you please, flodding, and eating on the grass and weeds that grow therein; and so hardy as not to take any affright at the report of your Piece. You shall shelter your self and your Piece behind his forehead, bending your body down low by his side, and keeping his body still full between you and the Fowl. Then having chosen your mark, take your level from before the forehead of the Horse, shooting as it were between the horse's neck and the water, which is more safe than taking the level under the horse's belly, and much less to be perceived; the shoulder of the horse covering the body of the man, and his legs also the man's legs. Whiles you are stalking you may leave your Dog with your Bags, &c. where he may lie close, and never stir till you have shot, and then upon the least call (but not before) come to you, and fetch forth what you have killed.

For want of a live-horse you may make an artificial stalking-horse of Canvas, either stuff, or hollow, and stretch upon splints of wood or strong Wires, with his head bending down, as if he grazed, of due shape, stature, and bigness, painted of the colour of a horse [the darker the less apt to be discovered.] Let it be fixt in the middle to a staff with a pick of Iron, to stick it in the ground while you shoot.

Instead of a horse you may make and use the shape of an Oxe, Stag, or any other horned beast, painted of the usual colour of beasts in that Country, and having the natural horn or head.

N. These Engines are to be employed in those places where the birds are used to feed, and be acquainted with the beasts they represent.

N. 2. These Engines are fitter for Water than Land, the water hiding their imperfections.

When you have so much beaten the fowl with the Stalking horse that they begin to find your deceit, and will not sit: Then you may otherwhiles use your Oxe-engine, till the Horse be forgotten, and so by change of your Engines make your sport last. The shape of a Stag may be useful in such places where Stags commonly feed, and are familiar with the Fowl, but they are subject to quicker discovery.

Some stalk with dead Engines, as an artificial Tree, Shrub, or Bush, or a dead Hedge. But these are not so useful for the stalk as the stand: It being unnatural for dead things to move, and the Fowl will not only apprehend, but chew it. Therefore if you use them, you must either not move them at all, or so slowly as that their motion shall not be perceived.

SECTION

SECTION II.

Of the taking of Land-Fowl.

CHAP. I.

Several ways of taking them by night.

§. I.

Of taking Birds with the Low-bell.

This is of use chiefly in Champain Countries, and that from the end of October till the end of March following.

About eight of the clock at night, the Air being mild, and the Moon not shining, take your Low-bell, of such size as a man may well carry it in one hand, having a deep, hollow, and sad sound; and with it a Net of small Mesh, at least twenty yards deep, and so broad as to cover five or six ordinary Lands, or more, according as you have company to carry it: and go into a Stubble-field [a Wheat stubble is the best.] He that carries the Bell must go foremost, and toll it as he goeth along as solemnly as may be, letting it but now and then knock on both sides. Then shall follow the Net born up at each corner, and on each side. Another must carry a pan of live coals, but not blazing. At these, having pitcht your Nets where you think any Game is, you must light bundles of Hay, Straw, or Stubble, or else Links and Torches, and with noises and poles beat up all the Birds under the Net, that they may rise, and entangle themselves in it, and you take them at pleasure. Which done extinguish your Lights, and proceeding to another place, do as before.

N. The sound of the Low-bell astonishes the Birds, and makes them lie close; and the blaze of light dazing their eyes affrights them, and causes them to rise and make to it.

N. 2. In this pastime all must be done with great silence, no noise being heard but the Low-bell only, till the Nets be placed, and the Lights blazing, and then you may use your pleasure: Which once extinguished, a general silence must be again made.

§. II.

Of taking Birds with the Trammel.

The Trammel is much like the Lowbelling Net, only it may be made somewhat longer, but not much broader. This Net, when you come to a fit place, spread on the ground, and let the hinder end thereof, being plummed with lead lie loose on the ground, but the foremost end at the two corners be born up by the strength of men, a full yard or more from the ground, and so trail the Net along the ground. On each side the Net some must carry great blazing Lights of fire, and by the Lights others must march with long Poles, to beat up the Birds as you go, and as they rise so take them. In this sort you may go over a whole field, or any other champain ground.

§. III.

How they take Birds in Italy by night with a Light and a Net called Lanciotota.

This sport is most used in the Champain of Rome. The Net is of the Mesh of an ordinary Lark-net. It is fastned to two green sticks of pliant wood, twice so big as ones greatest finger, and *two or three [Roman] yards long. These sticks must be fastned to the end of a square balton of two yards and half long in two holes, a little distant the one from the other, and covered with the same Net. [This Balton serves for a handle to carry and mannaage the Net with, and may be as well round as square,

square, and then the whole Instrument will somewhat resemble a Racket, such as they play at Tennis with.] These two sticks serve to extend the Net at top to about four yards breadth. This Net the Fowler carries on his shoulder, holding the handle of it in one hand, and a Lanthorn called *Fringmolo*, with a Lamp burning in it in the other; and when by the light he discovers any Bird within his reach, he claps his Net upon it, and covers it. Besides the Lanthorn the Fowler carries a Bell either at his Girdle, or his Knee, (like our Low-bell) the better to secure the birds to himself. This exercise cannot be used at all times, but only in Autumn or Winter, not beginning before one hour of the night. Whether the weather be cloudy or clear it is all one, so the Moon shine not.

The *Fringmolo* is a sort of Lanthorn made of Latten (commonly, but falsely, called Tin) all close but the fore-side. Its Base about a Roman Palm and half long, and at the aperture about a Palm broad, or a little more; likewise a Palm high: The Cover (which goes shelving) two Palms long: In the midst thereof above is a handle, and within side a thin plate of Iron three fingers distant from the beginning of the Cover, to preserve the Tin from being burnt and marred by the flame of the Lamp. Below is another empty handle to put in a stick to hold it up on high. Within, in a Circle made on purpose in the bottom, is put an earthen Lamp with a great Wick, and Oyl. With this kind of Lamp they also search bushes, hedges, and low trees, where they think Thrushes and other Birds perch, and having discovered them, strike them down with an Instrument called *Ramata*, made like a Racket with a long handle, or if they be out of reach of that, shoot them with a Cross-bow.

§. IV.

Of Bat-fowling.

Bat-fowling is a taking by night of great and small Birds, that rest not on the ground, but perch on shrubs, bushes, trees, &c. and is proper to woody and rough Countries.

First, one must carry a Vessel with fire (as in Low-belling) then others must have Poles bound with dry Wisps of Hay, Straw, pieces of Links, pitch Hurds, or any other combustible matter that will make a blaze. Others must bear long Poles with rough and bushy tops. When you are come to the Birds haunts, kindle some of your fires, and with your Poles beat the bushes and trees: Which done the Birds (if any be) will rise, and fly to, and play about the Lights: It being their nature not to depart from them, but almost scorch their Wings in the flame, so that they who have the bushy Poles may at their pleasure strike them down and take them.

Others carry with them a great Lime-bush made of the head of a Birch or Willow Tree, and pitching it down make their blazes close by it; and the birds will come and light upon it, and so be entangled.

In this Sport you must observe the directions given in Low-belling as to the choice of the night, and especially keeping silence, &c.

CHAP. II.

Of taking Land-fowl with Nets.

§. I.

A general way of taking many sorts of Land-fowl by the Crow-net.

THE Crow-net is the same in all respects with that described Chap. I. This Net may be placed near any Barn-door where Corn is winnowed, or in a Corn-stubble, or on the Greenward in the Morning and Evening haunts of any Birds where they gather Worms. Where-ever placed it must be carefully hid and concealed, as much as may be, from the view of the Birds, as if near a Barn-door by casting Chaff upon it, &c. Observe also, first to have some Covert to hide your person in, where you may see, and not be seen. Secondly, not to be too hasty in striking, but stay till you have a full number under the reach of your Net, and then pull freely and quickly.

§. II.

§. II.

Of taking Birds with Day-nets.

THE time of the Year for these Nets is from *August* till *November*: Of the Day a little before Sun-rise, so as your Nets may be laid, and all your Implements in readiness to begin your work by peep of Sun. The milder the Air, and the clearer and brighter the Morning, the fitter is the season for this exercise. The best place is in Champaign Countries, remote from any Town, Village, or common concourse of people, on short Barley stubbles, smooth green Layes, or level Meadows; if the place be not naturally even and plain where you pitch your Nets, you must make it so: That both lying and falling over they may couch so close to the ground that the shortest grass or stubble appearing through them, they may as it were lie hid and unperceived by the Birds, and that being covered they may not creep or flicker from under them.

Let your Nets be made of very fine Packthread, knit sure, the Mesh not above an Inch square. Let them be about three fathoms long, and not above one deep, verged on each side with strong small Cords, the ends extended upon two small Poles as long as the Net is broad, &c. in all things like the Net described §. I. save that that was to be but one single Net, but here you must have two exactly of the same size and fashion, and placed at that distance, that when they are drawn the sides may just meet and touch one another. Your Nets being flaked down with strong stakes, so that with any nimble twitch you may cast them to and fro at pleasure; some twenty or thirty paces from the Nets place your Giggs on the tops of long Poles, turned into the wind, so as they may play and make a noise therein. These Giggs are made of long Goose-feathers in the manner of Shuttle-cocks, and with little turnels of wood running in broad and flat Swan-quills, made round like a small hoop, and so with longer strings fastened to the Pole, will with any small wind twirl and flicker in the Air after such a wanton manner that the Birds will come in great flocks to wonder and play about the same. After the placing of your Giggs, you shall then place your Stake, which is a small stake of wood to prick down fast in the earth, having in it a Mortise hole, in which a long slender piece of wood, of about two foot, is so fastened that it may move up and down at pleasure, and to this longer stick you shall fasten a small Line, which running through a hole in the stake as fore said, and so coming up to the place where you sit, you may by drawing the Line up and down to you (with your right hand) raise and mount the longer stick from the ground, as oft as you shall find occasion.

Now to this longer stick you shall fasten a live Lark, or Bunting, (for you must be sure ever to preserve some alive for that purpose) or for want of such, any other small Bird, which the Line making to flicker up and down by your pulling, will entice the Larks to play about it, and swoop so near the ground, that drawing your hand, you may cover them with your Nets at pleasure: Also it will entice Hawks and any other Birds of prey to stoop and strike at the same, so as you may with ease take them.

There is also another Stake, called the Looking-glass; and this is a round stake of wood as big as a mans Arm, and made very sharp at the nether end, so as you may thrust and fasten it into the earth at your pleasure. This Stake is made very hollow in the upper part, above five fingers deep at the least; into this hollownel is placed a three-square piece of wood, about twelve Inches long, and each square two Inches broad, lying upon the top of the Stake, and going with a foot into the hollownel, which foot must have a great knob at the top, and another at the bottom, with a deep slenderness between them, to which slenderness must be fastened a small Packthread, which running through a hole in the side of the Stake, must come up to the seat where you sit. Now the three-square piece of wood, which lies on the top of the Stake, must be made of such a true poise and evenness, and the foot in the Socket so round and smooth, that upon the least touch it will twirl and turn round like a Scope-til, winding the Packthread so many times about it, which being suddenly drawn, and as suddenly let go again, will keep the Engine in a perpetual round motion, like a Childs Mill, made of a Nut, a stick, and an Apple. This done, you shall with Glue or other strong Cement fasten upon the uppermost squares of the three-square piece about twenty small pieces of Looking-glass, and paint all the spare wood

wood between them of a very bright red colour, which in the continual motion and turning about will give such a glorious reflection, that the wanton Birds cannot forbear, but will play about it with admiration till they be taken.

Now both these Stales are to be placed in the very midst between the two Nets, and about two or three foot distant one from another, so that in the falling of the Nets the Cords may by no means touch or annoy them. Neither must they stand one before or after another, but in a direct Line one over against another, the glass being kept continually moving, and the Bird very oft flickering. When you have thus placed your nets, Giggles, and Stales, you shall then go to the further end of your long drawing Lines, and Stale-lines, and having a little Hassock made of Sedge, about a foot or better high, you shall place it within a yard or little more of the end of the fame: And then sitting down upon the Hassock lay the main drawing Line (with a strong button of wood made fast in the fame) upon your thigh, and with your right hand continually draw the grass-Line, and with your left the Stale-line, and when you shall perceive the Larks or other birds to play near and about your Nets and Stales, swooping near and to the ground, you shall then with both hands pull the Net over, and cover and take your prey. If the weather be good be not too hasty to pluck at a single bird, but stay till you see many playing about your Nets.

Behind the Seat you sit on lay your spare Instruments and Implements which you are to use about the whole Work, as Spare-stakes, Poles, Lines, Packthread, Knitting-pin and Needle, your Bag with Stales, a Mallet to knock in your Stakes with, and a nimble little Hatchet to make new Stakes with, or sharpen them,

“There may be other devices to move the Stales, besides these here described by *Markham*, but these being as commodious as any, I shall forbear to trouble the Reader with the mention of more. These Nets may be made use of as well upon Hills and rising grounds as upon Plains, provided the Area on which they lie be level and even: near waters also, and in high ways and walks of Gardens, &c.

Olim describes the manner how these Nets are to be employed for taking of Starlings. Having observed (saith he) where those birds haunt most, provide your Nets six paces long, and eight Roman Palms deep, of a small Mafh, having their drawing Line of fifteen paces, Moreover, you must get a Cage of five Palms high, with a middle floor; in the upper Story whereof you shall put about one hundred live Stales, and in the lower others which are to serve for Stales. Those in the upper room are to call the wild Stales; and they must have their meat put all in one Vessel, and their water in one Cup, and that so strait, that they can drink but one at a time; likewise the day before they are to be used they should have no meat of two hours before night, that so being hungry, and striving to get to the meat and drink, they may make the greater screaming noise and cry. The live Stales (four in number) must be tied by the tails, each with a string, and by that string fastened one by one to a couple of sticks joyned together across between the Nets, to which cross a Cord is fastened that reaches to the Fowler, by the plucking whereof he may at pleasure move the Stales. In this manner of fowling are also to be used about twenty or twenty five Jackdaws, or such like birds-cases stuffed, and set out like live birds, and these placed in order between the Nets for dead-stales, the four live-stales being next the Fowlers Cabin. Let the dead stales be placed with their heads to the wind, that it do not ruffle and discompose their feathers.

The same Author gives us also an account of the manner how they take *Lapwings* with the Day-nets.

The Nets for this use are to be of ten paces length, of a large Mafh, having a drawing Line fifteen paces long. Between the Nets are to be placed fifteen or twenty dead Stales, that is *Lapwings* dried, or the Cases of *Lapwings* stuffed, and set out as if they were alive: And besides those two live-stales, which must be used and set as the *Starling*-stales, and have meat given them to eat. Observe in like manner to set the heads of your dead Stales against the wind. To entice the Birds you must counterfeit their note or cry by a *Lapwing*-call.

§. III.

§. III.

How to take Larks with Nets, called by the Italians Pantiere.

These Nets are about four [Roman] yards deep, or a little more, of the same Mafh with the ordinary Day-nets, strung on the upper side on a Cord, upon which they run with a row of little Rings, whereby they may be drawn out, or run up together as one pleases. These Nets are supported by two or three Stakes, or more, according to the wideness of the place where they are set. They are to be put in order two hours before Sun-set, for the Evening-driving; and for the Morning-driving, before break of day; in stubble-fields. About Musket-shot from the Nets two men on foot holding a rope of twenty or twenty five yards long, one at one end, the other at the other, must begin and walk towards the Nets, drawing the Rope over the stubble, and so raising the Larks that lie scattered up and down the field: the which will not take wing, but run forward before the rope, till at last they come within the Nets, which being not stretcht out straight, but easily running up, the more they struggle and fly about, the more they are entangled.

§. IV.

How the Italians take small Birds with a Net called Ragna.

The place for using these Nets is a Grove, (called from the Nets *Ragnaia*) which ought to be remote from high ways, and defended from the North-wind; which is very disagreeable and distasteful to the Birds, especially *Thrushes* and *Beccaficos*, besides the danger of the Woods being wholly or in part blatted by it. Wherefore it should be situate in some Valley, or on the side of a little Hill exposed to the South. Through it, or beside it should run some River, Brook, or other stream of water issuing from a quick Spring, that fails not in Summer. If it be so situate as to be encompassed on all sides with cultivated fields, in which grow some scattering Fig-trees, it will be the better. This Grove is wont to be made six, eight, ten, or twelve times so long as it is broad, according as the place will permit: In it long-ways must be drawn three, five, or seven walks, as it is broader or narrower. In case it hath not a natural fence or hedge you must make an artificial one, which must be tall and thick to keep beasts out, and birds in, and even on the top.

The Grove within must be planted with Juniper, Bays, Mastic-tree, Lime-trees, Oaks, Elms, and many other trees but especially Fig-trees. At the roots of such trees as cast their leaves plant Vines. Many other instructions and directions he hath about the Plantation, which who so pleases may see in him.

The Nets are exactly like those described, Section I. Chap. I. §. II. only the Mafh somewhat less, they being for small birds. The two out-side Nets or false Nets along their upper edge must have Iron or Horn-rings, and by them to be put upon a strong Cord. The middle or true Net must also be verged with a Cord. These Nets, one, two, or more of them, must be placed in the middle of the Grove, and crossing it; fastened by the top-cords to two great Poles or Pillars, made with winding steps round to mount up them; and on their tops having little rundles to draw the Lines nimble, and stretch out the Nets. The bottom of the Nets, or that side next the ground must have many strings hanging down from it, two or three Palms distant one from another, which are to be tied down to certain Pegs fastened in the earth. The middle Net, which must be the deeper, will fall down sufficiently in a lump or furl between the two side-ones, therefore with a Cane you must draw it gently through the Malhes of the false Nets, especially about the middle of the Nets, making in each Mafh a kind of purse or pouch, that when any Bird strikes against it, it may more readily run through the Malhes of the false net, and so catch the Bird as it were in a Bag.

The time for catching is either in the Morning early, before the Birds are gone out to feed, or at Even when they come to roost. At each end of the Grove in every walk one person must march forward toward the Net, making a noise as he goes with a Cane or Saff, and throwing stones or clods of earth, if it be for *Beccaficos*: But if it be for *Thrushes*, at first he must walk quietly and leisurely, without making much noise; and as he comes nearer the Nets, so make greater halt and more noise. Whence

it is wont to be said: *For Thrushes a wise man, and for Becassins, a fool or mad man.*

To hinder the Birds from mounting and flying away, some are wont to turn off a Sparhawk, or other little Hawk with Bells at her heels to soar aloft and hover over the Grove. Others are wont to do the same only with a pair of wings, and a Bell on the top of a Pole. When you see no more birds stirring, loosening the top-cords let down and furl up your Nets, with the birds in them; and either carry them home in the Net, or take them out at pleasure.

§. V.

Of the Sparrow-net.

THE Sparrow-net is made up of two cross-staves, a Purse-net, and two strings. The form of this Net you may see expressed

in which A F B represents the longer cross-staff, whose direct piece must be of the bigness of a handsome Hawks Pole; its transverse piece AB like the head of an ordinary hay-rake, but bigger and longer: CED the shorter cross-staff, joyned to the longer at E, so loosely as to fall to and fro at pleasure, of such due height and length, that when the cross pieces meet they may joyn even and just. CAEBD is a Purse-net, fastned to both cross-staves all along, and having that liberty at top, that the cross-staves may fall and part one from another at a pretty distance; its bottom being fastned to the longer staff at E. CAE, DBE are two small cords fastned to the two ends of the shorter cross-staff, and passing through two holes in the ends of the longer cross-staff, tied together at E, at such distance that the shorter staff may fall from the longer as far as you see meet, or the wideness of the Net will give leave. To the knot of the two Cords must be made fast a single Cord E G, which you must carry in your right hand, that you may at pleasure draw the cross-staves close together, and let them open as need shall require.

This Net is to be used late in the Evening, or early in the Morning, by setting it against the Eaves of thatched Houses, Stacks, Hovels, Barns, Stables, Dove-coats, &c. and being so set knocking and thrusting the cross-staves close against the same, making such a noise as may enforce the Birds to fly out of their holes or haunts into the Net; and then presently drawing the Line E G, and so shutting up the cross-staves enclose them, and letting down your Net, open it, and take them out.

The chief benefit of taking Birds in this manner is for the mewing of Hawks, or getting into lust and strength sick and weak Hawks: Because with this Engine you may take Evening and Morning so many birds as you please, and give them warm to your Hawk, which is the greatest nourishment that can be, raising a Hawk soon, and making her mew fast.

CHAP. III.

How to take several sorts of small Birds and other Land-fowl with Birdlime.

§. I.

Of taking small Birds with the Lime-bush, and Lime-twigs.

YOUR Lime-bush must be a main bough of any bushy tree, as Birch or Willow, or for want of them, Sallow, Poplar, or Aspen; whose twigs are long, smooth, and straight, without prickles, knots, or any other roughness or crookedness; having pickt and trim'd it (yet not taking away any of the little bud-knots) lime every twig and branch from the top down within four fingers or thereabout of the bottom. The body and main branches must not be touched with any Lime at all. Dabble not on your Lime too thick, nor yet let any part be left bare, or want its proportion, that ought to be limed.

Your Bush thus prepared, carry it forth into the fields where the haunts of the small birds are, and place it as near as you can to any of these haunts, if it be a hedge
or

or tree close to them, &c. provided that where-ever you pitch it down, you may very near it have some close covert to be concealed in, and there chirp like a Sparrow, or call with a note like the Linnet or Bull-finch [as the Cocks use to do when they mis the Hens, or the Hens the Cocks] altering your note according to your fancy, but continually calling in one note or other. This Art and Ability is gotten by diligent observing the Birds notes abroad, and by practice. But if you cannot frame your mouth to these sounds, get you a Bird-call; and having learnt how to use it Artificially, you shall fit in your covert, and call the Birds to you: And when you see any of them light upon your Bush let them alone, and move not till you see them finally entangled, which their own skipping up and down, and struggling when they find themselves snared, will do better than any affright from you whatsoever: Neither shall you stir for a single Bird or two, but stay till many be entangled: For the first that are taken will with their striving and fluttering in the bush be as good as Stales, and make a world of others repair to them, which you may then take: And this exercise you may continue from before Sun-rise till ten of the Clock in the Forenoon, and from one in the Afternoon till almost Sun-set in the Evening.

If you want a Call you may make use of a Stale; as of a Bat or two, placed next to your Lime-bush in such apparent manner that no bird thereabouts but may behold them; which will no sooner be perceived, but every bird will come to gaze and wonder at them: Then having no other convenient lighting place but the Lime-bush, they will flock as thick into the same as may be, and so you may take them at pleasure. So the Owl may in like manner be employed, which by reason she is more melancholy and less stirring than the Bat, and also of greater bulk, and sooner perceived, is a better Stale than the Bat. For want of a live Owl or Bat the skin of either stuff, or an artificial Owl made of wood and painted may serve the turn.

Others take these small birds with Lime-twigs only, by rising early in the Morning before break of day, and going to the haunts, and there watching when the Birds go forth to seek their food (which is ever at the spring of the day) and then finding that they have forsaken the hedges, they place their Lime-twigs all along those hedges, some upright, some slope-wise, and some across; and withal so thick, that the Birds can come no way into the hedge, but of force they must be entangled. This done they go into the Corn-fields, Meadows, or Grounds adjoining, where the Birds feed, and there beating them up and scaring them, make them retire to the hedges in great flocks, where they are presently entangled among the Lime-twigs, and taken in abundance. But this manner of taking is only for the Spring and Fall of the Leaf; and only for one certain time of the day, viz. an hour before and after Sun-rise.

§. II.

An excellent way of taking small Birds with Birdlime; out of the Epitome of Husbandry.

THIS is best done in a Snow. When you see the Birds flock together about your house or fields; chuse out one hundred large Wheat-eats; cut the straw about a foot long besides the ears; From the bottom of the Ears to the middle lime the straw for about six or seven Inches; let your Lime be warm, that so it may run thin upon the straw, and be less discernable to the Birds. Go then to the place, and carry a little bag of Chaff and threshed Ears, and scarer these fourteen or fifteen yards wide. Then take the limed Ears, and stick them up and down in the Snow, with the Ears leaning, or with the end touching the ground. Then retire from the place, and drive the Birds from any other haunt, and you will see presently great flocks repair thither, and begin to peck the Ears of Corn, and fly away with them, which as soon as any of them shall do, the straw that is limed laps under his Wing, and down he falls, not perceiving himself to be entangled: For I have seen many eat their Ears when they have been fast limed under the Wing. In the field you will take most Larks. For Sparrows stick your Ears upon the house-tops; though you never get the Birds. Every dozen of Sparrows you take in Winter shall save you a quarter of Wheat before Harvest.

Take away all your limed Ears, and in the Afternoon bait the place with a bag or two more of Ears and Chaff, and let them rest till Morning, that the birds may feed boldly, and not be affrighted; then take some fresh Ears, and stick them up as you did before.

§. III.

How to take Fieldfares with Birdlime : out of the same.

When time is, that is about or after *Michaelmas*, shoot a *Fieldfare* or two, and fet them in such order that they may seem to sit alive on a tree. Then having prepared the Lime-twigs about two or three hundred, take a Birchen bough, and cut off all the small twigs, make little holes and clefts all about the bough, and there place your Lime-rods: Then fet the *Fieldfare* upon the top bough, making him fast, that he may seem alive. Let this bough be fet near where they come in a morning to feed, (for they keep a constant place till their food is gone) that so flying near they may espy the top-bird: which as soon as they do, they will fall down in whole flocks to him.

§. IV.

How to take Pigeons with Lime-twigs : out of the same.

Get a couple of Pigeons dead or alive; if dead, yet order them so as to stand stiff as if they were living and feeding. Then at Sun-rising take your twigs, what quantity you please: Let them be very small [Wheat-straws are as good or better] and place them on the ground which the Pigeons frequent, where your two Pigeons are fet; and you shall find you will quickly be rid of them. Two or three dozen is nothing to take in a Morning if there come good flights.

§. V.

How to take Crows, Pies, Glean, &c. with Lime-twigs : out of the same.

Stick up Lime-twigs on the Carcass of a dead Horse newly stript, or any other Carrion, so soon as these birds have found it. Let them be very small, and not too thick set; lest they perceive them, and take distaste.

§. VI.

How to take Crows and Rooks when they pull up Corn by the roots : out of the same.

Take some thick brown Paper, and divide a sheet into eight parts, and make them up like Sugar-loaves: Then lime the inside of the Paper a very little [Let them be limed three or four days before you set them.] Then put some Corn in them, and lay fifty or sixty of them up and down the ground, as much as you can under some clod of earth, and early in the Morning before they come to feed. Then stand at a good distance, and you will see excellent sport. For as soon as a Rook, Crow, or Pigeon comes to pick out any of the Corn, it will hang upon his head, and he will immediately fly bolt upright so high that he shall seem like a small bird, and when he is spent, come tumbling down, as if he were shot in the Air.

§. VII.

How to take Stares with a lined string : out of Olina's Uccelliera.

Take a small string of a yard or thereabout long, bind it fast to the Tail of a Stare, having first carefully lined it all over, excepting one Palm next the bird. Having found a flock of Starlings, come as near to them as possible, holding your Stare by the wings as near as you can, and let her go to her fellows, which as soon as you shew your self to them, will presently take wing: Your tail-tied Stare endeavouring to secure her self of her liberty, thrusting her self into the middle of her fellows, will entangle many of them, and so not being able to fly, they will afford a pleasant spectacle in tumbling down to the ground: where you must be ready with a Brush or Broom to strike them down.

Many

Many other devices there are to take several sorts of birds with Lime-rods, &c. which I think needless to set down; it being not difficult for an ingenious Fowler to invent as good or better, when he shall have opportunity of taking those kinds of Birds.

CHAP. IV.

Of taking Birds with Baits.

This way is not for taking birds to eat, but for destroying noisom and ravenous Fowl, as Crows, Ravens, Kites, Buzzards, &c.

For the effecting whereof, 1. Observe their haunts. 2. Remember the hours or times of day when they are most sharp-set and greedy, as early in the Morning, so soon as they unpearch themselves; and again at Even a little before Sunset, especially at that time of the year when they have young ones; for then they will with greediness seize any bait, as fast as you cast it out. 3. Take a pretty quantity of *Nux Vomica*, and dissolve it in Wine Vinegar, or Wine-Lees, [those of Sweet Wine are the best.] Then take the garbage of any Fowl, and all-belmeare them over with your Solution of *Nux Vomica*, and cast them forth where such noisom birds haunt: and watching the birds in a convenient place, you shall see that after swallowing a bit or two, any such Fowl will presently grow dizzy, reeling and tumbling up and down, till at last it fall into a dead swoon.

Others take pretty big gobbets of raw lean flesh, as Beef, Mutton, &c. and making therein secret little holes, put in them small pieces of *Nux Vomica*, and close them up again.

You may also instead of either make use of Carrion, and either smear it with your Confection, or stop into the fleshy part of it small pieces of *Nux Vomica*.

It is best to let these baits lie loose, and not fasten them to the ground, as some practise.

To take granivorous birds of the greater kind, as Doves, Rooks, &c. boil good store of *Nux Vomica* together with Wheat, Barley, Pease, or any other Pulse very well in ordinary running water, till the Grain be ready to burst, then take it from the fire, and cover it till it be thoroughly cold. The Grain thus boiled and steep scatter thick where these Fowl frequent, and it will have the like effect upon them, as the Garbage or Carrion had upon the carnivorous.

For small birds boil your *Nux Vomica* with such seeds as they most delight in, viz. Hemp-seed, Rape-seed, Lin-seed, and above all Mustard-seed; and they will be in like manner intoxicated.

Some instead of *Nux Vomica* take only the Lees of Wine (which the sharper they are, the better) and in them boil and steep, or only steep (which is as available if continued a sufficient while) their Grain or Seeds, and scatter them as above directed.

Others take the juice of Hemlock, and steep in it their Grain or Seeds, mixing therewith a pretty sprinkling of Henbane and Poppy seeds, letting all stand in steep two or three days at least, and then drain it, and scatter it, &c. which will have the like effect with the *Nux Vomica*.

To recover any Fowl of these baits, take a little quantity of Sallet-oil (according to the strength and bigness of the Fowl) and drop it down its throat; then chafe the head well with Vinegar, and the Fowl will presently recover again, and be as healthful and able as ever it was.

CHAP. V.

Several ways of taking Partridges.

§. 4.

How to take Partridges and other Birds with a Setting-dog.

A Setting-dog should be a luffy Land-Spaniel, that will range well, and yet at such absolute command, that when he is in his full career one hem of his Master shall make him stand still, gaze about him, and look in his Masters face, as it were expecting directions from him, whether to proceed, stand still, or retire: but the main thing he is to be taught is, when he sees and is near his Prey of a sudden to stand still, or fall down flat on his belly, without making any noise or motion till his Master come to him.

For taking Partridge with him; when you come into the fields where Partridges frequent, call off your Dog, and let him range or hunt, taking care that he range not too far from you, but beat his ground justly and even, without casting about and flying now here and now there, and skipping many places (which the mettle of many even good dogs will make them apt to do.) If he do so, call him in with a hem, and threaten him with a stern countenance; and when he doth well encourage him. When you see him make a sudden stop or stand still, be sure he hath set the Fowl; therefore presently make in to him, and bid him go nearer; if he refuses, but either lies still or stands shaking of his tail, and withal now and then looks back upon you, he is near enough: Then begin your range or circumference about both the Dog and Partridge, not ceasing, but walking about with a good round pace, looking still before the Dogs nose, to see how the Covey lies, whether close together in a heap, or scattering. Then charging the Dog to lie still, draw forth your Net, and opening it, take you one end of the top-cord, and your Companion the other, and holding it stretcht, run with the Net against the Dog, and clap it down over the Birds, covering Dog and all with it: then make a noise to spring the Partridge, that they may rise, and be entangled in the Net: Some observe to run with their Net against the wind, to keep it fully extended. One man may make a shift to do all: But then he must peg down one end of his Net to the ground, and taking the other end spread it over the Birds.

The Italians (as *Olina* tells us) are wont to purge their Dog before they go a Setting with him: giving him a morsel made up of half an ounce of *Agarick*, and two drachms of *Sal gemma*, mingled with honey of *Roscs*, covered over with Butter, or some other unctuous matter, that he may the more readily swallow it: And the day following a broth made of a Weathers head, boild so, as with the flesh of it, bread, and a little Brimston pounded, to make a sup. He bids you also observe, 1. Not to hunt your Dog (especially after he hath been new purged) till the Sun hath dried up the dew; because else he will be apt to lose the scent, and also hurt his feet. 2. To begin to set on your Dog under the wind, that he may take the scent the better. The Net (he saith) ought to be a little longer than it is broad or deep; viz. between seven and eight yards over, and between eight and nine deep.

In this manner may be taken, not only Partridges, but Pheasants, Moot-pouts and Quails.

§. I.

Of the haunts of Partridges, and how to find Partridges.

The haunts wherein Partridges most delight, and most constantly abide, are Corn-fields, especially during the time the Corn is standing, under the Covert whereof they meet and breed. After the Corn is cut down they still remain in the Stubbles, especially Wheat-Stubbles, both because they love to feed on that grain before all others, and also for the height of the Stubble, which affords them safer covert. When the Wheat-stubble is either too scanty, or too much foyled and trodden in with Men and Cattel, they leave it and go to the Barley-stubbles, which though inferior in both respects, yet being fresh, and not so usually trodden and beaten, they take

take great delight therein. In Winter when these stubbles are either plowed up, or over-foyled with Cattel, manure, or the like, then they resort to the enclosed grounds; or upland-Meadows, and lodged in the dead grafs or fog, under hedges, among Mole-hills, and under banks, or at the roots of trees. You may also find haunts of Partridges in final Coppices or Underwoods, in Bushy Clofes, or where there grows Broom, Brakes, Furze, or Ling, or any other Covert: Provided always, that there be some Corn-fields adjoining, else they will rather avoid such places. In Harvest-time when they can have no quiet lodging in the Corn-fields, you may find them in the day-time in the Fallows adjoining, where they will lie lurking among the great clods and weeds; and only early in the Morning, and late at Evening fetch their food from the corn-sheaves next adjoining.

Now for finding them, some will do it by the eye, like hare-finders, viz. In taking their ranges over the stubble fields, or other haunts, casting their eyes on each hand, they will espy them out though never so close couched; which ability partly depends upon the goodness of the eye, partly is acquired by practice and exercise, by diligently observing the true colour of the Partridge, how it differeth from the ground, and also the manner of their lying. This is the easier done, because when you have once (as you think) apprehended them with your eye, you may walk nearer and nearer till you are absolutely sure you see them, provided you be ever moving, and stand not still or gaze at them (for that they will not abide) else they are follothful and unwilling to take wing, that till you be ready to set your foot upon them, they will not stir.

Others find them by the haunts and places where they last coucht: which they know partly by their dung there left, which if new will be soft, and the white part of it colour their fingers; and partly by their padlings or treadings, which if new will be soft and dirty, and the earth new broken of a darker colour than the mould about it; and being very new indeed, the place where they ate will be warm, and the ground smooth and flat with some small feathers or down scattered upon it. If you find such a haunt, you may be confident the birds are not far off. Therefore look carefully about you, especially down the Lands, walking leisurely; and in a short time you will espy them: which as soon as you do, you shall presently wind off from them, and by no means look towards them, and so fetch a large circumference round about them, keeping an ordinary round march, making your compass less and less, till you have discovered the whole Covey.

Others find them by going early in the Morning, or at the close of the Even, (which are called *Jinking* times) into their haunts, and there listening for the calling of the Cock-Partridge, which will be very loud and earnest, to which after some few calls the Hen will make answer; which as soon as they hear they listen till they meet, which they shall very well perceive by their chattering and rejoicing one with another. Then they take their range about them, drawing nearer and nearer as before, till they discover the whole Covey.

But the best, safest, easiest, and most pleasant way of finding them is by the Partridge-call. Having learnt the true and natural notes of the Partridge, and being able to tune every note in its proper key, and knowing the due times and seasons for every note, so as fitly to accommodate them, go forth either Morning or Evening to their haunts, and having conveyed your self into some close place, so as to see and not be seen, listen a while if you can hear the Partridge call. If you do, answer them again in the same note, and ever as they change, or double, or treble their note, so shall you likewise, plying still your Call till you find them draw near to you. For this calling is so natural and delightful to them that they will pursue it as far as they can hear it. Having drawn them within your view, call your self flat upon your back, and lie without moving as if you were dead, and you shall then see them running and pecking about you without any fear, so as you may take a full view of them, and if you please count their number.

§. II.

How to take Partridge with Nets.

These Nets may be made in all points like the *Pheasant-nets, only the Mesh *See chap. 6. somewhat smaller; but they would be much better were they something longer and broader. Having found the Covey, draw forth your Nets, and taking a large Circum-

Circumference about them, walk a good round pace with a careless eye, rather from than toward the Partridge, till you have fitted your Nets, and then draw in your Circumference lefs and lefs, till you come within the length of your Net, where, as you walk about, (for no stop or stay must be made) prick down a stick of about three foot long, and to it fasten one end of the Line of your Net: Then letting the Net slip out of your hand, spread it as you go, and so carry it and lay it all over the Partridges. If they lie stragling, that one Net will not cover them, draw out another, and do in like manner; and alike with a third, if needs be. Then rush in upon them, and with an affrighting voice force them to spring up, and presently they will be entangled in the Nets.

§. III.

3. How to take Partridges with Lime.

Take of the largest and strongest Wheat-straws, or for want thereof Ric-straws, and cutting them off between knot and knot, [the lowest joyns are the strongest and best] Lime them well over, and coming to the Partridge-haunts, after have called a little, and find that you are answered, prick down your straws round about you in rows, as above directed for Lime-twigs, not only cross the Land, but the Furrows also, taking in at least two or three Lands; and that not very near, but at a pretty distance from you, yet so as to discern when any thing toucheth them. Then lie close, and call again, not ceasing till you have drawn them towards you, whither they cannot come but they must pass through the limed straws, which they shall no sooner touch but they will be entangled; and by reason they come flocking together like so many Chickens, they will be so beset and dawb one another, that if there be twenty, hardly one will escape.

This way of taking Partridge can only be used in Stubble-fields, and that from *August* to *Christmas*: If you would take them in Woods, Pastures, or Meadows with Lime, you must use the ordinary Lime-rods before described, and prick them down, and order them in all points like as is directed for your Lime-straws.

§. IV.

How to drive Partridges and Quails, and take them in tunnelling Nets.

First provide you a stalking Horse, or an Engine made like a Horse or Oxe, such as we have described *Self*. 1. *Chap. 4.* Then go with your Nets to the Partridges haunts, and having found the Covey, pitch your Net in the secretest and likeliest place, so as to drive them down the wind. Lay not your Net flat on the ground, but set it sloopwise, and so over-shadow it with boughs, shrubs, weeds, or some other thing that groweth naturally on the ground it standeth on, that nothing may perceive it, till it be entangled. Then having covered your face with some hood of green or dark blew stuff, stalk with your Horse or Engine toward the Birds by gentle and slow steps, and so raise them, and drive them before you (for it is their nature to run before a Horse or Beast out of fear lest it tread on them.) If they chance to run any by-way, or contrary to what you would have them, then presently cross them with your stalking Horse, and they will soon recoil, and run into any track that you would have them, and at last into your Net.

The Net they use in *Italy* for this purpose is called *Butrio* or *Cuculo*, and made with two wings and a tunnel stretch with hoops. See Figure The Fowler stalks with a Bell in his hand, which he now and then rings.

With the same Net they also take Quails, pitching just before the tunnel of the Net two Poles, with five Cages hanging upon each, having live Quails in them, which serve to call and entice the wild ones. Before the Nets they cast Millet or Panic seed to invite them in. The drive them forward a man walks on each side the Net with a jingling Instrument [*Sonagliera*] in his hand first one, then the other sounding from hand to hand. The Net is to be pitched three or four hours before day, and the Birds driven early in the Morning: If the Moon shines you may drive at any time of the night.

CHAP. VI.

Several ways of taking Pheasants, as

§. I.

With Nets.

Pheasants delight most in thick, young, well-grown Coppice Woods, unfrequented and free from the footsteps and tracings of Men and Cattel: not in tall high woods of timber-trees.

Having found their haunts and breeding places, you may find their Eye or brood several ways: as first, by the eye, searching up and down the haunts, and bushes, &c. Secondly, By coming early in the Morning, or late in the Evening, and observing the old Cock and Hens calling, and the young birds answering them, and by that sound guiding your self, till you come as near as you can to the place where they meet, lying down there so close that you may not be discerned, and yet may exactly observe where they lodge, and accordingly where and in what manner to pitch your Nets. Thirdly, Which is the most sure and easy way, by an exact and natural Pheasant-call: wherewith you must learn to imitate all the Pheasants several notes and tunes, applying each to the right time and purpose, when and for which she uses it, whether it be to cluck the young ones together to brood them, to call them to meat when she hath found it, to chide them for stragling, to call them together to rejoice and wanton about her, for all which she hath a several note. The most convenient hours for the use of the Call are before or about Sun-rising, and somewhat before Sun-set, at which times they straggle abroad to seek their food, and then your note is to call them to their food, or give them liberty to range. But if you will call them after Sun-rise or before Sun-set, your notes must be to cluck them together to brood, as also to chide them for stragling, and put them in fear of danger. The notes of rejoicing or playing are rather for finding the old Couples when they are separated.

Being come to the haunts you shall lodge your self in the most likely place for your purpose, as close as possible, and then begin to call, first in a very low note, (lest the Pheasants be lodged near you, and then a sudden loud note may affright them) but if nothing reply, raise your note by degrees to the highest pitch, yet by no means overstraining it, or making it speak untunably; and if there be a Pheasant in the Wood within hearing of it he will presently answer, and that in your own note and key. If this call back be but from one single bird, and come from far, then you shall as secretly as you can creep nearer to it, still plying your call; and you shall find that the Pheasant that answereth will also come nearer to you. The nearer you come, the lower observe to make your Call speak, as the Pheasant her self will do, and her in all points you must imitate as near as you can; and in the end you will get a sight of her, either on the ground, or on the boughs of some low tree, as it were prying to find you: Then ceasing your Call a while, spread your Net as secretly and speedily as may be, in the convenientest place between you and the Pheasant, upon the lowest shrubs and bushes, making one end fast to the ground, and holding the other end by a long Line in your hand, by which when any thing straineth it you may draw the Net close together, or at least into a hollow compass. Which done, you shall call again; and then as soon as you shall perceive the Pheasant to come just under your Net, you shall rise and shew your self, that by giving him an affright, he may offer to mount, and so be entangled in your Net.

If many answer your Call from several quarters of the Wood, stir not at all, but ply your Call, and as they come nearer to you, spread your Nets in the most convenient places round about you; and when they are come under the Nets, boldly discomver your self, to give the affright, and make them mount.

§. II.

Of the driving of Pheasants.

IT is only Pheasant-Pouts that can be thus taken. Having found the eye of Pheasants by any the forementioned means, you must then (taking the wind with you, for they will naturally run down the wind.) In the little pads and ways, which you see they have made, (for they will make little tracks almost like sheeps tracks) and as near as you can to some special haunt of theirs, (which you shall know by the barrenness of the ground, mutings, and loose feathers you shall find there) place your Nets hollow, loose and circular wise, their nether part being fastned to the ground, and upper lying hollow, loose, and bending, so that when any thing rustheth to it, it may fall and entangle it. Which done, you must go where before you found the haunt, and there with your Call, if the Eye be scattered, call them together; then taking your Instrument called a *Driver*, made of good strong white Wands or Osiers, set fast in a handle, and in two or three places bound with cross Wands; of the shape of those Wand-dressers (which Cloth-workers use in dressing of Cloth) therewith make a gentle noise upon the boughs and bushes, which the Pouts hearing will presently run on a heap together from it a little way, and then stand still and listen. Give then another rack or two, at which they will run again as before, and thus by racking and striking you may drive them like so many sheep which way you please, (crossing them, and racking as it were in their faces, if they chance to go a wrong way) till you have brought them all into your Nets.

In this driving be sure, 1. To conceal your self from the sight of the Pheasants, For if they perceive you, they will instantly scatter and run one from another, and hide themselves in holes, and bottoms of bushes, and not stir from thence upon any occasion as long as any day endureth. And therefore it were not amiss to wear over your face a green hood, and a Wreath of green leaves about your head, and trim your Garments with branches and leaves of trees. 2. To take time and leisure, and not do any thing rashly. For any thing done suddenly or rashly to these fearful Creatures breeds offence and amazement: And a scare being taken, though but by one bird, their fear will not suffer them to argue or dispute the object, or stay till every one have beheld the thing suddenly affrighting them; but away they all fly at the very first apprehension, in an instant. And therefore if you find any staggering or dismay among them, presently cease and lie still as though you were dead, till the fear be over, and they gaze no more about them, but gathering themselves together do begin to peep and cluck one to another, and rejoice among themselves, and then you may fall to your work again.

§. III.

Of taking Pheasants with the Lime-bush, or Lime-rod.

YOUR Rods must be twelve, or at least ten Inches long, well limed down to the middle, and no further. Your Lime-bush must contain not above eight twigs at most, being the top-branch of some young Willow; with a handle about a shaft-length long, sharpened so as either you may stick it gently into the ground, or prick it into any shrub or bush, where-through the Pheasants usually trace, or on any small tree where they use to perch, [Place two or three of these bushes there.] Then make use of your Call, and you will quickly have all the Pheasants within hearing about you; and it is a chance but some of them will be toucht, and if but one be limed she will go near to lime all her fellows; for what by her struggling amongst them, and they coming to gaze, some will be smeared by her, and some will light on other bushes: And if some one or two escape by mounting, and get to the Peach, and there (as is the natural quality of them) sit prying to see what becomes of their fellows, it is ten to one but they will be taken by the Lime-bushes placed on the Peach. Old Pheasants when you call, oftentimes will not come on the ground, especially in Winter, but mount and come flying from Peach to Peach, till they come to that next you, ever prying and peeping to find him out that calleth, where they will probably be taken.

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It very requisite to keep an exact account of all your Lime-bushes and Rods, and when you have gathered up your Pheasants, see what bushes or rods you have missing; for if you miss but one of them, you may be assured that there are some limed which you have not found: And therefore never be without a Spaniel that will lie close at your foot, and that will fetch and carry, and neither break nor bruise flesh nor feather, to hunt out and bring you all the birds that shall so lie hid.

The Lime-rods may be placed not only upon bushes and shrubs by Pheasants tracks, but also upon the ground in open places between thickets in such order as is directed above, neither too thick and apparent so as to breed affright, nor so thin as to let any escape, leaving about the length of a Rod or less between Lime-rod and Lime-rod.

The Season for using of Lime is from the beginning of November till the beginning of May, for during that time the twigs of trees (on which Birds perch) are void of leaves, and like to Lime-twigs. The time for the use of Nets is from the beginning of May till the latter end of October: during which time the trees are covered with leaves.

The Pheasant-net would be made of the best twined double Housewives thread, died green or blue, the Mesh almost an Inch between knot and knot: It would be in length at least three fathoms, in breadth seven foot or better, verged on each side with a strong small Cord, and as it were furled thereon; the Net being placed not straight, but thick and large, that at any time when it is extended it may lie compass-wise and hollow: The two ends likewise should be verged with small Cord, yet that more for strength than any particular use. The great Nets (which some use) are cumbersome and hardly manageable, and therefore if occasion be, it is better take and use a couple of ordinary size.

CHAP. VII. §. I.

How to make the best Birdlime according to G. Markham.

TAKE at Midsummer of the Bark of Holly so much as to fill a reasonable big Vessel, and boil it in running water till the grey and white bark rise from the green; which will take up a whole day or better. Then take it from the fire, and after the water is very well drained, separate from it the barks: Take all the green, and lay it on the ground in a close place, and on a moist floor, as in some low Vault or Cellar, and cover it all over a good thickness with Docks, Hemlock, Thistles, and the like green weeds, [or else make it up in a heap with Fern SSS, that is, first a layer or bed of Fern, then a layer of Bark, then a layer of Fern again, and so on interchangeably] and so let it lie for the space of ten or twelve days; in which time it will rot, and turn to a slimy matter: Then pound it in a large Mortar, till it come to be one uniform substance or paste, that may be wrought with the hand like dough, without discerning any part of the Bark or other substance. Which done, take it out of the Mortar, and carry it to a swift running stream, and there wash it exceedingly, not leaving any mote or filth in it. Then put it up in a close earthen pot, and let it stand and purge for divers days together, (three or four at least) not omitting to skum it as any foulness arises, and when no more will rise, put it into a clean Vessel, and cover it close, and keep it for use.

Now when you have occasion to use it, take thereof what quantity you shall think fit, and putting it into an earthen Pipkin with a third part of Hogs grease, or (which is better) Capons grease, or Goose grease, set it on a very gentle fire, and there let them melt together, and stir them continually till they be both incorporated together, and become one entire substance: Then take it from the fire and cool it, stirring it till it be cold.

When it is well cooled, take your Rods, and warming them a little over the fire, wind about the tops of them some of it so prepared, then draw the Rods one from another, closing them again, do this several times, continually plying and working them together, till by smearing one upon another, you have bestowed upon every Rod a like quantity of Lime, keeping the full breadth of your hand at least free and without any Lime at all, ever and anon warming the Rods before the fire, to make the Lime spread on them the better, and to make it lie smoother and plainer, that the Fowl may not perceive it, and take affright at it.

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As for the liming of straws, it must be done when the Lime is very hot, and in such manner as the Rods are done, before the fire, only you must not do a few, but a great heap together, as big as you can well gripe in your hands, for so they are the stronger, and not so apt to bruise or break in pieces, and therefore in this opening and working of them, you shall not do it with a few together, but as many as you can well gripe, tossing, and turning, and working them before the fire, till they be all befmeared equally.

Now to preferve your Lime from freezing even in the sharpest weather, take a quarter so much of the Oyl called *Petroleum* as you do of Capons greafe, and mixing them together well, work it upon the Rods, and it will ever keep your Lime gentle, supple, and tough, so that no frost, how violent soever, can hurt it.

§. II.

How to make Birdlime according to Olina, which was the way of the Ancients.

Take of the Berries of Misselto, as great a quantity as you can get; the more the better: Put them in a moist place to putrefie or macerate, and when they are well macerated, take the stuff and beat it soundly with a round Cudgel [Balton] till it shews clear, without any filth, for that is a sign that it is done enough. Put it up in a Pot, and keep it in a moist place well covered with Parchment.

When you would make use of it, put it in a Pan, and to every pound of Lime add an ounce of Oyl Olive, mingling and incorporating of them well at the fire, and when you see that they are well mixt and united, and become like an Ointment, take it from the fire, and put thereto half an ounce of Turpentine, and incorporate them well together: and so you may employ it to take what you please. It serves also for the water. The same Author mentions other sorts of Birdlime brought out of Forcin Countries, with which I think it needless to trouble the Reader. In a cold and frosty season he advises instead of common Oyl to mingle and incorporate your Birdlime with Oyl of Nuts, which resists the cold better than common Oyl.

§. III.

How to make the best water-Birdlime, out of a late English Writer.

Buy a pound of the strongest Birdlime, and having washed it nine times in clear Spring-water, till you find it very pliable, and the hardness quite gone, beat out the water thoroughly till you cannot perceive a drop to appear: Then having dried it well, put it into an earthen Pot, and add thereto, 1. As much of the best Capons greafe, without Salt, as will make it run. 2. Two spoonfuls of strong Vinegar. 3. A spoonful of Sallet-oil. 4. A small quantity of Venice Turpentine, and boil them all gently upon a soft fire, continually stirring it: And then take it from the fire, and let it cool; when you use it, warm it, and so anoint your twigs or straws.

CHAP. VIII.

Of the election and training up of a Setting Dog.

Although the Water-Spaniel, Mungrel, shallow-flew'd Hound, Tumbler, Lurcher, or small bastard Mastiff may be brought to Set; yet none of them is comparable to the true-bred Land-Spaniel, being of a size rather small than gross, a strong and nimble ranger, of a courageous fiery mettle, a quick sent, delighting in toil, and indefatigable, yet fearful of, and loving to his Master. Of what colour he be it matters not much.

Having gotten you a Whelp of such a Breed, begin to handle and instruct him at four or six months old at the furthest.

1. You must make him very loving to, and familiar with you, and fond of you, so as to follow you up and down without taking notice of any man else, by suffering no man to feed or cherish him but your self. You must also make him stand in awe of, and fear you as well as love you, and that rather by a stern countenance and sharp words than blows.

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2. Then you must teach him to couch and lie down close to the ground, first by laying him down on the ground, and saying to him, *Lie close*, or the like, terrifying him with rough language when he doth any thing against your command, and cherishing him, and giving him food when he doth as you bid him. And thus by continual use and practising the same thing, in a few days you shall bring him readily and presently to lie close on the ground, when ever you shall but say, *Couch, down, lie close*, or the like.

3. Next you shall teach him, being couched, to come creeping to you with his head and belly close to the ground so far, or so little way as you shall think good, by saying, *Come nearer*, or the like: First, till he understand your meaning by shewing him a piece of bread, or some other food to entice him. And if when he offers to come he either raise from the ground his fore or hinder parts, or so much as lift up his head, then you shall not only with your hand thrust down his body in such sort as you would have him keep it, but also chide and rate him so as to make him strive to perform your pleasure: And if that will not quicken him sufficiently, to the terror of your voice add a sharp jerk or two with a Whip-cord lash. When he does your will either fully or in part according to his apprehension cheerfully, then you must be sure to cherish him, and to feed him: And then renew his lesson again till he be perfect in it. In like manner you must make him stop and pause when you bid him.

4. Then you shall teach him to lead in a string, and follow you at your heels without straining his Collar, which you may easily do by practice, not striving too roughly with him.

5. When he is thus far taught, you may out into the field with him, and suffer him to range and hunt, yet at such command, that upon the first hem or warning of your voice he stop and look back upon you, and upon the second, that he forthwith either forbear to hunt further, or else come in to your foot, and walk by you. If in ranging you find he opens, you shall first chide him therefore, and if that prevail not, either bite him hard at the roots of his ears, or lash him with a sharp Whip-cord lash, till you have made him so staunch, that he will hunt close and warily without once opening, either through wantonness, or the rising up of any small birds before him.

When you find that he is come upon the haunt of any Partridge, (which you shall know by his eagerness in hunting, and by a kind of whimpering and whining, as being greatly desirous to open, but for fear not daring) you shall then warn him to take heed by saying, *be wise*, or the like. But if notwithstanding he either rush in and so spring them, or else open or use any means by which the Partridge escapeth, you shall then correct him soundly, and cast him off again in another place where you are sure a Covey lies, and then as before give him warning. And if you see that through fear he standeth still and waveth his tail, looking forward as if he pointed at somewhat, be sure the Partridge is before him: Then make him lie close, and taking a large ring about him, look for the Partridge. When you have found them, if you see he hath set them too far off, you shall make him creep on his belly nearer, else let him lie close without stirring, and then drawing your Net take the Partridge. Encourage your Dog by giving him the heads, necks, and pinions of the Partridge, and also bread or other food. But if he chance by any rudeness or want of taking heed to spring them again, you shall correct him as before, and lead him home in your string, and tie him up that night, giving him nothing but a bit of bread and water, and the next day take him out, and do as before, but with somewhat more terror and harshness, and doubtless the Dog will do according to your will: Which if he doth, you must by no means forget to bestow upon him all the cherisings of voice, hand, and foot.

It is a fault in a Dog to stand upright as it were looking over the Partridge when he sets them, and therefore you must chide him for it, not giving over till you make him lie close.

It is also a fault for him when you go in to the Covey, to spring up the Partridge into your Nets, to rush hastily after you, or spring them before you, for which you must correct him; and your self proceeding leisurely the next time, ever as you go (speak to the Dog to lie close.

CHAP. IX.

An Abridgment of some Statutes relating to the preservation of Fowl.

NOW left any one, either not legally qualified or licensed, or by taking Fowl at prohibited times, or by prohibited Engines, or by destroying of their Eggs, should through ignorance incur the danger of the Law, I have thought fit to subjoin an Abridgment of such Statutes as relate to the preservation of Fowl, collected and sent me by my worthy Friend Mr. *Walter Ashmore*.

25 H. 8. c. 11.
confirmed
3 & 4 Ed. 6.
c. 7.

None to destroy or take away the Eggs of any Wild Fowl on pain of one years imprisonment; and to forfeit for every Egg of a Crane or Bustard taken and destroyed 20 *d.* Of a Bittern, Heron, or Shoveler 8 *d.* Of a Mallard, Teal, or other Wild-fowl 1 *d.* to be divided between the King and the Prosecutor. And herein Justices of peace have power to hear, enquire, and determine offences of this kind, as they use to do in cases of trespass. Yet this act not to extend to such as kill Crows, Choughs, Ravens, and Buzzards.

34 Ed. 3. 22.

A Hawk taken up shall be delivered to the Sheriff, who after Proclamation made in several Towns, (if challenged) shall deliver her to the right Owner. And if the Hawk were taken up by a mean man, and be not challenged in four months, the Sheriff to have her, satisfying the Party for taking her: But if by a man of estate, who may conveniently keep a Hawk, the Sheriff shall restore her to him again, he paying for the charge of keeping.

If any take away or conceal a Hawk he shall answer the value thereof to the Owner, and suffer two years imprisonment, and in case he be not able to answer the value, he shall remain in prison a longer time.

37 Ed. 3. 19.

He that steals and carries away a Hawk, not observing the Ordinance of 34 Ed. 3. 22. shall be deemed a Felon.

11 H. 7. 17.

None shall take Pheasants or Partridges with Engines in anothers ground without licence, in pain of ten pound to be divided between the Owner of the ground and the Prosecutor.

None shall take out of the Nest any Eggs of Falcon, Goshawk, Lanner, or Swan, in pain of a year and a days imprisonment, and to incur a Fine at the Kings pleasure, to be divided between the King and the Owner of the ground where the Eggs shall be so taken.

None shall bear any Hawk of English breed called a Nyelle, (Goshawk, Tarcel, Lanner, Lanncret, or Falcon) in pain to forfeit the same to the King.

He that brings a Nyelle Hawk from beyond the Seas shall have a Certificate under the Customs Seal where he lands, or if out of *Scotland*, then under the Seal of the Lord Warden or his Lieutenant, testifying she is a Foreign Hawk, upon the like pain of forfeiting the Hawk.

None shall take, kill, or fearaway any of the said Hawks from their Coverts where they use to breed, in pain of ten pounds.

9 H. 5. 15.

Every Freeman may have Eyries of Hawks within their own Woods which be within a Forest.

23 Ed. 1. 10.

None shall kill or take Pheasants or Partridges by night, in pain of 20 *s.* a Pheasant, and 10 *s.* a Partridge, or one months imprisonment, and bond with Sureties not to offend again in the like kind.

Directions to recover the Forfeitures, *vid.* Statute.

None to hawk or hunt with Spaniels in standing Grain in pain of 40 *s.*

1 Jac. 27.

No person shall kill or take any Pheasant, Partridge, Pigeon, Duck, Heron, Hare, or other Game, or take or destroy the Eggs of Pheasants, Partridges, or Swans, in pain of 20 *s.* or imprisonment for every Fowl, Hare, or Egg, and to find Sureties in 20 *l.* not to offend in the like kind.

No person shall keep Dog or Net to take or kill any of the last mentioned Game, unless qualified as in the Act, in pain of 30 *s.*

No Person to buy or sell any Partridge or Pheasant upon pain to forfeit 20 *s.* for every Pheasant, and 10 *s.* for every Partridge.

No Person to betwix punished for one offence.

Persons are to be licensed in Sessions to kill Hawks meat, and to become bound in 20 *l.* not to kill any of the said Games, nor to shoot within 600 paces of a Heronry, within

within 100 paces of a Pigeon House, or in a Park, Forest, or Chase, whereof his Master is not Owner or Keeper.

Every person having hawked at, or destroyed any Pheasant or Partridge between the first of July and last of August shall forfeit 40 *s.* for every time so Hawking, and 20 *s.* for every Pheasant or Partridge so destroyed or taken.

This offence to be prosecuted within six months after it is committed.

Lords of Mannors and their Servants may take Pheasants or Partridges in their own grounds or Precincts in the day time between *Michaelmas* and *Christmas*.

Every person of a mean condition having killed or taken any Pheasant or Partridge shall forfeit 20 *s.* for each one so killed, and shall become bound in 20 *l.* not to offend so again.

Constables and Headboroughs upon warrant to search houses, and seize Dogs or Nets, and destroy them at pleasure.

Lords of Mannors to appoint Game-keepers, who by a Warrant from a Justice may in the day-time take and seize all Guns, Bows, Grey-hounds, Setting-dogs, Lurchers, or other Dogs to kill Hares or Conies, Ferrets, Trammels, Low-bells, Hays, or other Nets, Hare-pipes, Snares, and other Engines for the taking and killing of Conies, Hares, Pheasants, Partridges, and other Game within the Precincts of such Mannor, as shall be used by any Person prohibited by that Act to keep or use the same.

Persons under the value of 100 *l.* per annum; or for term of life, or not having Leaves for ninety nine years, or for a longer term of the value of 150 *l.* other than the Son and Heir apparent of an Esquire or other person of higher degree, and the Owners and Keepers of Forests, Parks, Chases, or Warrens, are not to have or keep for themselves or others any Guns, Bows, Greyhounds, Setting-dogs, Lurchers, Hays, Nets, Lowbells, Hare-pipes, Snares, or other Engine.

THE

THE
SECOND BOOK
OF THE
ORNITHOLOGY
OF
FRANCIS WILLUGHBY Esq;

Of Land-Fowl.

THE FIRST PART.

Of such as have hooked Beaks and Talons.

THE FIRST SECTION.

Of Rapacious Diurnal Birds.

CHAP. I.

Of Birds of prey in general, especially Diurnal ones.



THE Characteristic notes of Rapacious Birds in general are these: *To have a great head; a short neck; hooked, strong and sharp-pointed Beak and Talons, fitted for ravine and tearing of flesh: Strong and brawny thighs, for striking down their prey: a broad, thick, fleshy tongue, like a mans; twelve feathers in their train: four and twenty flag feathers [remiges pennæ] in each wing; [The number of these feathers can hardly be counted exactly, and doth (I believe) vary in these Birds, the greater kinds having more, the lesser fewer.] The two Appendices or blind guts very short, so that they seem to be of no use to them, at least when grown up: A membranous stomach, not a muscular one, or Gizzard, like granivorous Birds: To be very sharp-sighted, for spying out their prey at a distance, to be solitary, not gregarious, by a singular providence of nature: For should they, coming in flocks, jointly let upon Cartel, the flocks and herds of sheep and beasts would scarce be secure from their violence and injuries. This note is not common to all Rapacious birds in general, though Aristotle hath delivered for an universal observation, *ῥαπτοὶ σὺν ἀγέλαϊς*, i. e. No Birds of prey are gregarious. For Vultures, (as Bellonius hath observed) fly in company fifty or sixty together: To be deep-feathered. The feathers investing their bodies if they be not thicker set, are at least taller or longer than in other birds, so that their bodies seem to be much greater than indeed they are: This note is common to all Rapacious birds, but not proper to them alone. To be long-lived, and as is commonly thought, more than other birds, whereof being not yet fully satisfied, I will not rashly affirm any thing, but leave the matter to be determined by experience and diligent observation. But certain it is, (as we have before demonstrated) that all Birds in general, account being had of their bigness, are very long-lived. To endure hunger (or abide without food) a long time, which considering their food and manner of living is almost necessary; seeing their prey is not always ready for them. The Females are of greater size, more beautiful and lovely for shape and colours,*

colours, stronger, more fierce and generous than the Males. For this cause some will have the Males called *Tarcls*, that is, *Birds*, because they are lesser by one third part than the Females. The reason of this inequality and excess of magnitude in the Females some do assign, because it lies upon the Females to prey not only for themselves, but for their Young, therefore it is requisite they be more strong and generous. Moreover (that we may note that by the) among the Females themselves the tokens of goodness are taken from their greatness; for by how much a *Hawk* is bigger and more weighty, so much better is it accounted. So that (as *Tardious* witnesseth) in *Syria* Birds employed for Fowling are all bought by weight; and so much the dearer by how much they weigh more. Howbeit the *Astures* [*Goshawks*] (if we may believe the *Italian Proverb*) [*Astore piccolo & Terzuolo grande*] by how much the less they are, by so much the more are they esteemed. Here again *Vultures* are to be excepted, of which the Males are said to equal or exceed the Females in bigness. The *Balls of the Beak* is covered with a naked skin or membrane, which our Falconers call the *Scar*. This note is proper to Rapacious Birds that prey by day; for the night-birds have no such Membrane. The outmost toe is connected with the middlemost by an intervening Membrane, as far as the first joint. This note is common to all Rapacious Diurnal Birds, but not proper to them alone, agreeing to many other birds besides. The breast in most Rapacious birds is partly coloured or spotted: In most I say, not in all; for, the *Vultur Beticus*, *Milvus Aeginosus*, and some few others are to be excepted. Some others also of the forementioned notes are not proper and peculiar to this kind, as for example, To have twelve feathers in the tail, and to have very short Appendices or blind guts, which are common also to the Crow-kind, and most small birds.

Add to these, that in Birds of prey the Hook of the upper chap is produced by Age to that length sometimes, that it hinders their feeding: That the Claw of the outmost Toe is the least: That the flesh of carnivorous birds doth sooner corrupt and putrefie than of any other: That the interior sides of their Claws are sharp-edged: That their Excrements are for the most part fluid like milk: That the interior Vanes of the prime feathers of their Wings and Tails have white or pale-coloured cross bars: That the colour of the back and upper part is for the most part brown.

CHAP. II.

Of the Eagle in general.

THE Eagle in general may be thus defined, *A diurnal Rapacious Bird of the biggest sort, the most generous of all, having its Beak hooked almost from the very root.* By its bigness it is distinguished from the *Hawk*, by its courage and spirit and by the hookedness of its Bill from the *Vulture*.

There are many things delivered by the Ancients and Moderns concerning the nature and conditions of the Eagle in general; which are partly false or uncertain, partly common to other Birds of prey.

Of the first sort I take the following to be.

1. That its feet are not equal, but the right bigger than the left.
2. That its feathers being mixt with the feathers of other birds, especially *Geese* and *Pigeons*, do waste and consume them.
3. That whereas the excels in quick-sightedness, in trying her Young whether they be genuine or spurious, she makes use of an argument taken from the sight. For hanging them up by the Claw, she exposes them to the Sun-beams, and those that she sees look steadfastly on the Sun, she keeps and brings up as right-bred, and her genuine Offspring, but such as turn away their eyes, as not being able to behold it, she casts away as degenerate.
4. That the Eagle as long as she lives changes not her Nest or Haunt, but returns yearly to the same.
5. That after Noon she flies abroad and preys, but all the Forenoon before dinner she sits idle.
6. That she touches not Carrion or dead Carcasses; feeding only upon the flesh of such Animals as she kills her self.
7. That whereas for the most part she hatches two young ones, she brings up but one, casting out the other, to ease her self of the toil of nursing and feeding it.

2. That

8. That she would not at all hatch her Young, did she not bring the *Eagles stone* [*Aetites*] into her Nest, which is of wonderful vertue in promoting excretion.

9. That when the Young are sick, and cannot concoct more solid food, by reason of the weakness of their stomachs, the old ones suck the blood out of their prey, and feed them therewith.

10. That in extreme old age, when their Beaks by reason of their drinels are grown so crooked that they cannot feed, they sustain themselves for some time by drinking.

11. That the old ones when they see their young fledged and ready to fly, do carry them up a height, and then let them go, admonishing them as it were by their own peril to make use of their Wings, and by flying through the Air to save themselves from falling. If after they have let them go they fall down to the ground, up they take them again, often repeating this kind of exercise.

12. That she hath an extraordinary care of her Talons, lest by any means they should be blunted. Hereupon in walking she always draws them up, and turns them inwards, refuses to walk in stony places, lest perchance she should wear their points. And if she happens to sit or walk upon Rocks, she spreads under her feet the skins of such Animals as she hath kill'd, lest her Talons should be hurt. Yea so careful is she of them, that where ever she sits, unless the eyes the Sun or her prey, she is always looking at them; fearing lest they should grow too crooked. And if by chance they be blunted, she sharpens them with her Bill, or whets them upon stones, to render them fitter for preying.

13. That when she is enfeebled with old age, she flies as high as ever she can above the Clouds, till the dimness of her eye-sight be consumed by the heat of the Sun; then presently descending with all her force, while she is yet in the extremity of heat, she drenches her self three times in the coldest water she can find, and rising up thence straightway betakes her self to her Nest, where among her young now fit for preying, falling into a kind of Fever, with a sweat she casts her feathers; and is by them carefully nursed up and fed, till she recover her plumage again.

14. Whereas the greatest part of Birds either out of fear or wonder, fly after the Owl, the not thinking such carriage to become a Kingly bird, is nothing moved with that spectacle.

Of the latter kind are these.

1. That she doth so excel in quick-sightedness, that soaring so high in the air, that she can very hardly be discerned by us in all that light, yet she can espie a Hare lying under a bush, or a little Fish swimming in the water. Though I grant that both the Eagle and other Rapacious birds are very sharp-sighted, yet do I not think that, their eyes can reach objects at such distances.

2. That she is indocile and incapable of Discipline, and not to be tamed by any humane endeavour: But is only carried on headlong by her natural inclination and impetus. This is not universally true. For we have heard of Eagles that have been reclaimed and trained up for fowling. Though it be rarely done.

3. That her breath smells very ill, so that by reason of the pestiferous stench thereof, the bodies that are blown upon by her do easily putrefie and corrupt.

4. That she is very greedy and almost insatiable: and therefore if at any time she endures hunger, (of which she is most patient) she recompenseth her long fasting by abundant eating and gorging her self. And if her prey be so great and copious that any thing remains when she is fatiated, she leaves that to the other birds, which use to follow her in expectation thereof.

5. That almost all Birds of prey live without ever drinking; yet is their belly always loose, and their Excrements fluid. For the blood of the Animals they kill affords them liquor enough for the concoction and digestion of their meat.

6. That it is very venerous. For the Female being trodden thirteen times a day, yet if the Male doth but call, runs to him again. Now whereas all falacious creatures are thought to be short-lived, one may justly wonder, that the Eagle should be the most lustful, and yet withal the most vivacious of Birds.

7. When their young ones are grown up, and come to that age and strength, that that they can without the help of their Parents get themselves meat, they drive them far away from their Nests; nay, they will not suffer them to abide so much as in the same Country.

8. Nature hath given the Eagle very thick, hard, and almost solid bones, and in which there is but very little marrow.

All these things we have transcribed out of *Aldrovandus* his *Ornithology*, where occur more such like, which are common to other Rapacious Birds. For besides its eminent Magnitude we do not acknowledge any Characteristic note whereby *Eagles* may be distinguished from *Hawks*. How they are differenced from *Vultures* shall be shewn when we come to treat of *Vultures*.

As for the names of the *Eagles*, it is called *Grecians* Ἀετός and Ἀετός from the Verb Ἀίωω, signifying to rull on or be carried forwards violently with great force and swiftnels, becaufe of the swiftnels of its flight : By the *Latines* it is named *Aquila*, either *ab acumine uisus* from the sharpness of its light, or from the colour called [*Aquilus*] that is, blackish or dusky, so denominated from water [*Aqua*.]

CHAP. III.

Of the several kinds of Eagles.

ø. I.

*THE GOLDEN EAGLE; CHYSAETOS *Aldrovandi Ornithologiae*, lib.2. cap.2.
Aquila fulva seu aurea.

Is Weight.
Its Length.
Breadth.
The Beak.
The Mouth.
The Tongue.
The Palate.
The Sear.
The neck-feathers.
* Of a ruffy
riband.
The Eye-lids.
The Eye-brows.
The Eyes.
The Wings.
The Train.
The colour of
the whole
body.
The Hag-
Feathers.
The Legs.
* Like * 74.
* As Birds.
The Feet.
The Talons.

BEing put in the balance [*statera*] we found it to weigh twelve pounds. From point of Beak to tip of Tail it was full three feet and nine Inches long. The breadth from the Bill to the Talons was four spans and an half. The breadth from tip to tip of the Wings extended eight spans. The Beak was one Palm [hand-breadth] and one inch long. For the hooked part alone hung down beyond the lower Chap a full Inch. The breadth of the Bill, especially about the middle was more than two Inches. The hooked part or point was blacker; the rest of the Bill of a horn-colour, inclining to a pale blue, and spotted with dusky. The wideness of the Mouth gaping [*visus*] was one Palm and an Inch. The Tongue was like a Mans, broad, round, and blunt at the tip, toward the root on both sides armed with two hooked, horny *Appendices*, tied down in the middle to the lower mandible by a thin Membrane. The Palate perforate in the middle. The lower Chap of the Bill channelled, the edges whereof standing up on both sides are received in the upper. The Membrane which arising from the Forehead is extended beyond the Nostrils, and likewise the borders of the bridle or corners of the mouth are yellow. The feathers of the neck are rigid and * ferrugineous. A certain thick Tunicle stretched forth from below upwards covered the eye in nictation. This Membrane is called in Latine *Periophthalmium*. Two Eye-lids, one above, the other beneath, covered the Eye, although the lower alone extended upward was sufficient to cover the whole Eye. The region of the Eye-brows was very eminent, like that prominent part of the roofs of boules called the Eaves; under which the Eyes lay hid, as it were sunk in a deep cavity. The Eyes were of the colour called *Choreux*, of a fiery splendor, shining forth in a pale blew. The Pupil was of a deep black. It is very admirable to observe what care Nature hath taken, and what provision the hath made for the conservation of the Eyes, than which there is no part in this Animal more excellent. For not being content with one Tegument, as is usual in other Animals, the semeth to have framed four several lids or covers for them. The *Periophthalmium*, or Membrane for Nictation, is the same thing, and affords the same use to them that the Eye-lids do to a man. Besides which Nature hath superadded two other Eye-lids, and of these the lower so large, that they alone suffice to cover and preserve the Eyes. The colour of the Wings and Tail is dusky, and so much the darker by how much the feathers are bigger. The colour of the rest of the small feathers of the whole body is a dark ferrugineous or Chestnut, sprinkled with white spots, fewer on the back, more on the belly, the bottoms of all being white. Six of the prime feathers on each side were twenty two Inches long apiece, having very firm and hard quills, but shorter than those of *Geese*, and very good to make Writing Pens. The Legs were feathered down to the feet, of a ferrugineous colour. Hence it may evidently appear to any man, how much * *Petrus Bellonius* is mistaken in that he writes, that *Eagles* are distinguishable from *Vultures* by one only sign, viz. having their Legs naked or destitute of feathers, contrary to what we see in *Vultures*. The feet were yellowish: The back-claw of the left foot six Inches in circumference; that of the right foot but four

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so great was the difference between them; which I suppose not to have been natural, but induced by force, for this seemed to be maimed. The Talon of the foremost of the fore-toes of the left foot was five inches in length, that of the middle three and an half, the least two. The Talons of the fore toes of the right foot were bigger, in proportion to the back-claw, than those of the left. Four Semicircular Tables covered each toe near the Talons, excepting the greatest of the fore toes, which had only three ^{*} *anuli*. The rest of the feet was covered with Scales about the bigness of millet grains, or somewhat less.

If any one desires an Anatomy and description of the inward parts, let him consult *Aldrovandus* in this place : See also here the arguments whereby he proves this bird by him described to be the *Chrysaëtos* of the Ancients ; and the notes whereby he distinguishes it from other *Eagles*.

I suspect this to be the same bird with that hereafter described by us under the title of *Pygæus*. The chief difference is, that half the Tail in that is white, whereas in this the whole is of one [dusky] colour.

This with great fierceness flew upon any thing that came in its way: and would with its Beak and Talons assault and strike at Dogs, Cats, &c. and even man himself, if they did, before they were aware, approach too near the Cage in which it was shut up. So far *Aldrovandus*: to whom this Bird was sent by the Great Duke of Tuscany.

The Golden Eagle with a white ring about its tail.

We saw three Birds of this sort in the Royal *Theriotrophium* near the *Tower of London*, and a fourth in *St. James Park* near *Wellminster*. For signets they approached to *Turkeys*. The Beak near the head was straight, toward the end hooked, of a horn-colour; the Sear or skin covering the *Bas*s of the beak of an ash-colour or blewish white; the space from the *Nostrils* to the eyes bare of feathers: The mouth very wide when gaping: The Tail of a mean length, with a transverse bar or ring of white. The upper Chap of the Beak had on each side a small obtuse Angle or Tooth, as that of the *Kestrel* and other *Hawks*. The infide of the mouth was of a flesh-colour. The Feathers covering the head and neck not smooth and even, but rigid, narrow, and lying at a distance one from another: The Talons black; the Legs feathered down below the knees. Our Country-men call this bird simply and absolutely the *Eagle*, without any Epithet of distinction, as if indeed this were *αετ' ἐξοχλη*, the *Eagle of Eagles*. I take it to be specifically the same with the precedent.

§. II.

*The SEA-EAGLE or OSPREY; *Haliaeetus seu Aquila marina*; *Nisus Veterum*.

Aldrovandus confesses that himself never saw this Bird: But the description he gives of it, sent by a certain eminent Physician, agrees exactly to the ENGLISH BALD BUZZARD. Moreover Leonard Balner, a Fisherman of Straburg, who himself described and caused to be painted by the life all Water-fowl that frequent the River Rhine thereabouts, sets forth the *Bald Buzzard* under the title of *Fisch-Adler*, i. e. the *Fish-Eagle*. But seeing that our *Bald Buzzard* is a lesser Bird than that it may merit the name of an *Eagle*, and is also very like to, and not much bigger than the *Common Buzzard*, we will treat thereof in a more commodious place, among its fellows, viz. the lesser sort of wild birds of prey. And in this place for the *Haliæetus* or *Sea-Eagle* we will present the Reader with the *Offspring* of *Aldrovandus*, seeing that for its bigness may justly challenge a place among *Eagles* and is also a fierce and generous Bird, preying upon Fish, and frequenting not only Pools and Rivers, but also the Sea. I am not ignorant that *Aldrovandus* will by no means admit this Bird to be the *Sea-Eagle*: 1. Because it answers not to the description of the *Sea-Eagle* left us by the Ancients, which makes it to be not much bigger than the *Kite*, whereas this Bird for bigness falls not much short of the *Chrysaëtor* itself. 2. Because all the notes of the *Offspring* agree to it, viz. A whitish ash-colour, clouded Eyes, a beard under the chin, and finally *Aquiline* magnitude. But yet these Arguments are not of so great force with me to evince this Bird to be the *Offspring*, as the manner of living alone to be the *Sea-Eagle*: unless perchance the *Sea-Eagle* and *Offspring* be Synonymous words and names of one and the same Bird. Neither do I much matter the descriptions of

The bald Buzzard described for the Sea-Eagle.

That the Offspring of Aldrovandus is the Sea-Eagle.

The bald
Buzzard de-
scribed for the
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d frage of A:-
dionandus is
at the Sea-Eagle

the *Ancients*, who in delivering the notes of Animals are wont to be less curious and exact. But whatever the *Ancients* called the *Sea-Eagle*, certain it is that the title of *Sea-Eagle* may be very fitly attributed to this Bird. For if we admit the *Bald Buzzard* for the *Sea-Eagle*, (which, to speak the truth, agrees better to the descriptions of the *Ancients*) we take away all note of distinction between *Eagles* and *Hawks*, which (as we said before) consists only in difference of magnitude.

The *Offspring* then or *Sea-Eagle* is thus described by *Aldrovandus*. From the point of the Beak to the end of the train or Talons, (for the ends of both when extended were coincident) it was three feet and four Inches long: From tip to tip of the Wings stretched out nine spans broad. It weighed eleven pound. The Bill was very hooked, so that the hooked part alone was an Inch long; the whole two Inches broad, and an hand-breadth long; of a blackish or dusky horn colour, somewhat approaching to a dark blue. The Tongue was very like to a mans, with a broad top, and hooked, hard, and horny *Appendices* on both sides, tied down to the lower mandible by a thin Membrane, where it regards the chin a horny Membrane compases the end or tip of it. The lower mandible was hollowed like a channel, [I suppose he means the sides of it] the edges or borders of which channel enter the Palate on both sides, and are enclosed within its edges. In the middle of the Palate is a chink by which a pituitous humour distils from the head. The head and all the neck are clothed with long, narrow, and rigid feathers. From the Chin hang down small feathers like hairs imitating a beard; whence perchance by *Pliny* and also *Belonius* it is denominated the *bearded Eagle*: And I from that note chiefly suppose it to be called *Harpe* by *Opprey*.

The Palate.
The head and neck.

The Beard.

The colour of the feathers.
The Wings.
The Train.

The Legs.

The body covered with Down.

The Toes.
The Talons.

* Golden Eagle.
Circulates this for the Sea-Eagle.

This is the English *Offrey*.

This is hath no one feet without, the other down.

The head and all the neck are clothed with long, narrow, and rigid feathers. From the Chin hang down small feathers like hairs imitating a beard; whence perchance by *Pliny* and also *Belonius* it is denominated the *bearded Eagle*: And I from that note chiefly suppose it to be called *Harpe* by *Opprey*. The feathers of the whole body singly are particoloured, and that with three colours, whitish, duskyish, and ferrugineous. The flag-feathers of the Wings are almost wholly black, something tending to Chestnut. The twelve feathers of the Train have little or nothing of red, but are only spotted with black and white, viz. whitish on the outside, dusky on the inner. The two middlemost, being besprinkled promiscuously with white spots, are for the most part dusky. The ends or tips of all are black. The feathers growing on the rump, which immediately cover these, are almost wholly white, sprinkled with a little black, save that their tips are black. Their Legs are almost wholly covered with dusky feathers, somewhat inclining to fulvous; so that there is only two inches to the feet remaining bare. Besides the feathers the whole body underneath is covered with a white and soft down, as it were a delicate fleece, after the same manner as the skin of a *Swan*. The lower part of the Legs, which as we said for the space of two Inches is destitute of feathers, and the feet are of a deep yellow. The toes extended are a full span; the length of the middlemost is equal to a Palm. The Talons were very black in so much that they shone again; and so hooked that they did exactly represent a Semicircle. They observed this proportion one to another; the hindmost being the biggest was two Inches long; the first of the fore ones lesser than it, but bigger than the middlemost, and the last the least of all. The substance of the Talons was inwardly white and bony, covered over outwardly with a dusky bark. The leg and foot were for the most part covered with round scales of unequal bigness; but the fore-part of the Leg, and upper part of the toes had Semicircular Tables like the * *Chrysaetos*.

Clavius sent to *Aldrovandus* the Picture of this Bird drawn in colours to the life, by the title of the *Sea-Eagle*, writing thereof in this manner, This *Haliæetus*, which our Countrymen living in the Sea-coast call *Zee Aron*, that is, *Sea-Eagle*, was shot the last Winter, &c. That this *Eagle* feeds only on Fish I myself can witness, for in the stomach thereof dissected we found nothing but Fish, some remaining yet entire, some half consumed, &c.

That this Bird is the same which our Seamen and Fowlers call the *Offrey*, and affirm to have one that or webbed foot to swim withal, after the manner of a *Goose* or other Water-fowl, the other being divided after the manner of other Birds of prey, I do not at all doubt. But what is reported concerning the feet is most certainly false and fabulous: although by some affirming it with great confidence, even the best Naturalists have been deceived; among the rest *Aldrovandus* himself, not daring rashly to contradict, *Albertus Magnus* English men and *Burgundians* eye-witnesses. For (saith he) the Natives of each Country are most likely best to know what things are peculiar to their own Country either by Land or Sea. Well, I myself am an English man, yet have I never yet met with any credible person who would affirm himself to be an Eye-witness of this matter, although the Vulgar be so confidently persuaded of it, that scarce any body doubts its truth. What gave the first occasion and rise to this

Error

Error was (I suppose) a presumption of the necessity of such a structure of the feet. For whereas the Mariners and Fishermen did see and observe this Bird much to frequent the Sea and great Lakes of water, and to prey upon Fish; yea, sometimes to fly forth very far from Land, so that it hath been often seen out at Sea, a hundred Leagues distant from shore, flying up and down over the water, and intent upon fishing; they imagined it altogether necessary that it should be furnished with one flat foot for swimming, and another cloven for striking, catching, and carrying away of Fish. It being, one would think, impossible, that a bird should abide upon the Wing so long without rest. But that even small birds, short-winged, and less fit by far for flight than *Eagles* will venture to fly over wide Seas is evident in those we call birds of passage. And who knows but where those Fowl are usually seen, there may be some Rocks in the Sea not far off, on which they may rest themselves. But for the same reason this conceit was first started, it was readily entertained, and without examination greedily believed.

Not less fabulous is that which is reported of the oyl or fat which this bird hath in the Oyl of her rump, and which hanging in the air, she lets fall drop by drop into the water; by the force whereof the Fishes being stupefied, and as it were Planet-stricken, become destitute of all motion, and so suffer themselves without difficulty to be taken; though some are so vain as to put Oyl of *Opprey* into their receipts or prescriptions for taking Fishes, by the smell whereof the Fishes being allured, rather than stupefied by its narcotic virtue, yield themselves to be handled and taken out of the water by such as have their hands anointed with it. Doubtless he that can get the Oyl of such an *Opprey* as they talk of may work wonders with it.

§. III.

Of the BLACK EAGLE, called *Melanaëtus*, or *Aquila Valeria*.

WE saw a Bird of this kind kept shut up in a Cage in the * *Stadt-bay* of *Mid-* * The Town
delburgh in *Zealand*. It was double the bigness of a *Raven*, but lesser than the *Pygarg*. The Jaws and Eye-lids were bare of feathers, and somewhat reddish: The head, neck, and breast black. In the middle of the back between the shoulders was a large triangular white spot dashed with red. The rump red. The lesser orders or rows of feathers in the Wings were of a *Buzzard* colour; then followed a black streak or bar cross the prime feathers, after that a white one, the remaining part of the feather to the tips being of a dark ash-colour.

The Beak was less than that of the *Pygarg*, black at the end, then yellow as far as the Scar or skin covering its Base, which was red. The Eyes [understand the *Brides*] were of a hazel colour. The Legs were feathered down but a little below the knees; the naked part being red. The Talons very long.

Those Birds which *Aldrovandus* hath set forth for *Melanaëtus* or *Black Eagles*; although they differ in some marks from this here described, as for example, in the blewish horny colour of the Beak; in the dark ferrugineous colour of the crown of the head and neck, and that their Legs are almost wholly covered with feathers, scarce an inch remaining bare, and that yellow, yet I doubt not but they are of the same species; there being in the Rapacious kind a great difference for the most part between Cock and Hen in point of magnitude and colour; the colours also in the same Sex varying very much by age and other accidents.

Of the place of this Bird, its food and manner of living, building its Nest, Eggs, conditions, &c. we have nothing certain.

It is called in Greek *Μελαναιέτης*, from its black colour. *Λαγοφύλας*, or *Leporaria*, from killing of Hares: And in Latine *Aquila Valeria*, from its strength and valour.

§. IV.

Of the PYGARG or white-tail'd Eagle, called *Pygargus*, and *Albicilla*, and by some *Hinnularia*.

IT is called *Pygargus* from the whiteness of its rump or train, which word *Gaza* its Name, rendered in Latine *Albicilla*.

The Male (which we described) was for bigness not much inferiour to a *Turkey*. It weighed eight pounds and an half, [it is like, the Female in this, as in other Birds of prey, Bigness, Weight,

Length, prey, may be bigger and more weighty.] Its length from the tip of the Beak to the end of the train was two feet and nine inches, to the end of the Talons two feet and five inches. The distance from tip to tip of the Wings stretcht out seven feet wanting but one inch, or two yards and eleven inches: From the tip of the Beak to the Nostrils was near two inches, to the corners of the mouth three, to the Eyes almost to much. The breadth of the Beak an inch and a quarter; the hooked part of the upper Mandible over-hanging the lower three quarters of an Inch. The Nostrils oblique and half an Inch long. The second or middle bone of the Leg was six inches and an half long, the third or lowermost no more than three and an half. The colour of the Beak was yellow, and also of the *Sear* or skin covering its *Basis* as far as the Nostrils. In the Palate it had a Cavity equal to the Tongue. The Tongue broad, fleshy, black at the tip. The sides or edges of the Beak sharp. The Eyes great, withdrawn or sunk in the head, overhung and defended by Eye-brows, prominent like the Eves of a house: The *Irides* of a pale Hazel colour [in one Bird which we saw of this sort they were red; in another yellow.] The feet were yellow, in the soles were callous rough knobs, or fleshy protuberances, as in others of this kind: The Talons large, sharp, and crooked, that of the back-toe (as generally in most Birds) being greatest: That of the middle toe an inch long, the toe it self being two Inches.

Colour of the Head, Neck, Rump, Body. The prime wing-feathers. The Wings. The Train. The Entrails, and Guts. The Head was pale or whitish, the feathers being sharp-pointed, and their shafts black. The neck covered with narrow feathers; the upper part thereof something red; the Rump blackish; else the whole body round of a dark ferrugineous colour. The number of prime feathers in each Wing was about twenty six or twenty seven, whereof the third and fourth were the longest; the second shorter by half an inch than the third, and the first by three inches and an half than the second. The Wings when closed reached not to the end of the train. Of the Pinion feathers and the rest of the flags they make Quills for Virginals, and very good Writing Pens. All the prime feathers of the Wings were black; the lesser rows of the Wing-feathers had their edges of an ash-colour. The tail was eleven inches and an half long, made up of twelve feathers; the upper or extreme part for above half way being white, the lower black. The extreme or outmost feathers were shortest, the rest gradually longer to the middlemost.

It had a large Gall, long Testicles, small Guts, having many revolutions, and being by measure one hundred thirty two inches, or eleven foot long, a small stomach, above which the Gullet was dilated into a kind of bag, granulated on the inside with many small protuberancies, which I take to be glandules, and which being squeezed a little, yielded a kind of pap or slime, serving, it is like, as a *menstruum* to help macerate the meat in the stomach. It had a vast Crawl; small short *Appendices* or blind guts, viz. not more than three quarters of an inch long.

This Bird, shot dead by a certain Fowler, we bought and described at Venice in the year 1664. and from the white ring about the tail denominated it *Pygargus*. It differs from that we have entituled the *Golden Eagle with a white ring about its tail*, chiefly in the colour of the Head and Beak: So that I suspect it may be the same: as also with the *Golden Eagle* of *Aldrovandus*, notwithstanding the white colour of the train, which perchance may alter with age. [yet it differs also from it in other accidents, as for example, in the yellow colour of the Beak.] If these three birds be not the same, yet are they very like and near of kin to one another: Perchance the only difference may be in Age or Sex.

The *Pygargus* of * *Aldrovandus* seems to be a different kind, which he describes in these words,

It is of a mean magnitude as big as a large *Dunghil-Cock*. The Bill all over yellow, hooked, and bending by little and little from the very root to the utmost tip or point of the hook, somewhat longer than in other *Eagles* in proportion to the bigness of the Bird. The Pupil of the eye very black, the *Iris* yellow. The crown of the head and all the neck of a pale Chestnut, inclining to an Ash-colour, the tips of the feathers being more black. The back and upper part of the Wings are covered with dark ferrugineous and blackish feathers, as also are the Belly and Thighs for the most part. The Tail from the Rump to the end is wholly white; whence the name of *Albicilla* was not undeservedly by *Gaza* imposed upon it, Howbeit two of the smaller feathers [I suppose he means the two middlemost] which lie upon and cover the other greater and principal ones have black tips. The Legs are almost wholly bare of feathers, and both Legs and Feet intensely yellow, both being all over covered with square Table-like Scales. The Talons very sharp. The

The former *Pygargus* of *Belonius* seems to be nothing else but the male of the *Ringtail* called in English the *Henharrier*.

§. V.

* Of the Eagle called *Morphnos* or *Clanga* and *Anataria*.

That Bird which by *Gesner*, and out of him by *Aldrovandus* is figured and described under this title, being again nothing else but our *Bald Buzzard* (as *Turner* himself acknowledges, who sent the description to *Gesner* under the title of *Morphnos*) I shall omit it here, referring it to its proper place among the wild Hawks; it being (as I said before) of a lesser size than to deserve to be ranked with *Eagles*.

In stead of the true *Morphnos*, which *Aldrovandus* professes himself not to know, I shall here give you the description of that Bird which he calls *Morphno Congener*.

It is (saith he) of about the height and bigness of a large *Dunghil-Cock*: From the tip of the Beak to the end of the Train three spans and an half long. The Beak was pretty long, hooked, and tending almost directly downward, joynted to the head by a yellow Membrane [I suppose he means the *Sear*.] The colour of almost the whole Plumage was ferrugineous, saving that at the ends of the Wings towards the belly it was beautified with many oval spots, scattered up and down, and moreover, that the utmost tips of the beam-feathers were white, as also the beginning of the Tail, and the extremities of all its feathers, and the lower part of the Rump. The Legs were all over feathered down to the beginning of the toes, and besprinkled also with whitish Ash-coloured spots. The Feet were yellow; the Toes above toward the Leg covered with Scales, toward the Talons with annular Tables. The bottoms of all the feathers white. The Pupil of the Eye black, encompassed with a cinereous circle: It would very greedily devour small Mice.

Belonius for the *Morphnos* of the Ancients gives us the *Jer-falcon*; whose opinion *Aldrovandus* disallows.

This Bird took the name *Morphnos* from the spots of the feathers whence also it may in Latine not unfitly be called *Nevia*. Others will have this name to be derived from *μειγνυσα*, the Preterperfect Tense of *μιγνυσα*, being changed into a short and the letter *ν* interpolated, and so to signify rapacious. It is called *Clanga* both by the *Greeks* and *Latines* from the found of its voice.

§. VI.

* The crested Eagle of *Brasil*: *Urutaurana Brasiliensis*, Margggrav.

This Bird is of the bigness of an *Eagle*: It hath a black Bill (the upper Chap whereof is hooked) yellow near its rise or Base: The Eyes of a lovely Gold-colour, with black Pupils, which it can cover with an ash-coloured skin [*Periophthalmum*] though it shut not the Eye-lids. It hath an *Eagle*-like head, but compressed or plain above [flat-crowned] in the top whereof it hath two black feathers about two inches long, with two small ones on each side: These it can when it lifts set up an end, and again let down flat. The Wings reach but little beyond the bottom or rise of the Tail. It hath a broad Tail like an *Eagle*. The Head above is covered with dusky feathers having yellowish edges: The upper part and sides of the neck with brown ones [rather cinereous or terrous] like a *Partridge*. The whole throat and lower part of the neck is white, yet so that the white is variegated at the sides with black feathers. The whole breast and lower belly, the upper and lower legs down to the very feet are covered with white feathers, wherewith black ones are mingled scalewise. The Wings and Tail are of a dusky colour, shaded, having the utmost borders or edges white. The feet have four Toes, yellow of colour, with dusky crooked Talons. Its cry is *Geb, Geb*, like to that of a Chicken which hath lost its Dam, [we express that voice by *Yelp, yelp*] If you cast a bird to it, whether alive or dead, it catches it in its Talons, and with its Bill handfomly plumes it, and then tearing it in pieces swallows down both flesh and bones. I kept one of these alive a long time in the Fort *Mauritius* by the River of St. *Frances*.

§. VII.

§. VII.

* The *Brazilian Urubitinga* of Marggrave, very like our *Pygarg* or *White-tail'd Eagle*.

This Bird is like an *Eagle*, of the bigness of a *Goose* of six months old. It hath a thick hooked black Beak; a yellowish skin about the Nostrils: Great sparkling *Aquiline* Eyes: A great Head: Yellow Legs and Feet: Four Toes in each foot, disposed after the usual manner; crooked, long, black Talons: Large Wings: A broad Tail. It is all over covered with dusky and blackish feathers; yet the Wings are waved with ash-colour. The Tail is nine Inches long, white for six, the end for three Inches being black; howbeit in the very tip there is again a little white. This is a stately Bird of tall stature [*Eregia stature*.] It doth in many things approach to that described by us under the title of *Pygargus*, save that the upper part of the tail-feathers in that of ours was white, the lower black, whereas in this, on the contrary the upper is black, and the lower white. Mr. Willughby mentions another variety or difference of the *Pygargus*, in which the Tail-feathers from the middle downwards were white, the upper half being black, which seems to be altogether the same with that here described by Marggrave.

§. VIII.

* Of the *Vulturine Eagle* of *Aldrovandus*, called *Pernopteros*, *Gypaëtos*, and also *Ovipelargus*.

Though *Aldrovandus* makes this Bird a sort of *Eagle*, entitling it *Pernopteros*; yet he confesses it to have nothing *Aquiline* beside the name, being ignoble, sluggish, and deformed, and therefore deserving to be set behind not only *Eagles*, but also *Vultures*. We take it to belong to the family of *Vultures*, as will appear from its description compared with the general notes of *Vultures*.

Of this sort of Birds *Aldrovandus* gives us three figures, and three descriptions, besides that of *Belonius*, which, whatever it be, seems to be a Bird of another kind. The first, was of a *Vulturine Eagle* brought out of *Spain*, in these words:

It was of eminent Magnitude, yea, not much less than the *Chrysaëtos*, but of an unusual and ridiculous shape; the Beak, not as in other *Eagles*, bending from the root to the tip by a continual declivity, but straight almost to the middle, toward the point bowed into a remarkable hook, after the same manner as in *Vultures*, white toward the Head, the rest of it being black; the lower Chap wholly white. The mouth within-side [*Oris vitiis*] of a Chestnut-colour. The *Irides* of the Eyes not, as in other *Eagles*, of a fiery colour, but whitish; the Pupil black. The whole Head whitish, inclining to dusky [*fulcum*]. The upper part of the Neck, about half way down, almost bald, beset with very few, and those small feathers, of a white colour. At the end of this bald part, almost in the middle of the Neck, grew small feathers like certain rough curled hairs, standing up above the rest of the Plumage, as it were very fine slender, long bristles; the like whereto it had in the beginning of the back and breast, in places just opposite to one another, and also on the Rump below. On the Back was as it were a kind of hood, reaching to the middle thereof, ending in a sharp peak, and resembling a Triangle. The colour of the whole body was a dark Chestnut inclining to black. The Tail long; the Feet and Legs white; the Claws dusky.

The second was of one taken by Country men on the *Alpish* Mountains of the Town *Ginlia*, as follows. From the tip of the Bill to the end of the Tail it was by measure three spans long. The Bill was long, but for the most part covered with skin or membrane, so that about an inch only of the tip remained bare; the hooked end small and slender. The Head was bald or destitute of feathers to the hind-part, so that the feathers standing up behind the crown, resembled a Monks hood, put back, and leaning on his neck, when he goes with his head uncovered. The colour of almost all the feathers of the whole body was dusky, inclining to a dark Chestnut: Only interrupted by a continued Series of whitish feathers on the lower part of the neck, making an acute Angle, the point running down the middle of the back, which was as it were the acuminate part of the Monks hood, hanging from the shoulders down

down the middle of the back. * Also another series not unlike this of whitish feathers, terminating in an acute Angle about the middle of the back, covered all the lower part of the back toward the complications of the Wings, somewhat resembling a Clock. The Tail was broad, and of a mean size. The Feet dusky, and all over covered with Scales. The Beak and Talons were of one and the same dusky horn-colour. The feathers on the thighs reached not lower than the knees. It would without difficulty suffer it self to be touched or handled, whence you may note its sluggishness and cowardice. Being angered it cried like a *Kite*.

The third is *Gesner*. This *Eagle* (saith *Gesner*) whose figure we here present you with, if it be not the *Gypaëtos*, i. e. the *Vulturine Eagle*, or *Oripelargus*, i. e. the *Mountain Vulture*, yet seems to be bred at least of one Parent of this kind. For in Beak it resembles a *Vulture*, in colour a *Stork*, being ignoble and sluggish. It was unknown to our Fowlers, being never, that I know of, taken with us. But in the year of our Lord, 1551. on September. 29. there falling an extraordinary Snow, a Bird of this kind, her Wings being wet and heavy, fell down into a narrow place in the open Air adjoining to one of our Citizens houses. It did for shape and colour wholly resemble a *Stork*. It was Carnivorous, yet would not touch Fish; impatient of cold: The body intensely hot, so that the cold hands of them that touched it were presently warmed thereby. It would sit stark still in the same place for four or five hours; and sometimes look upon the Sun when it shone out. *Hens* and other birds scorned, despised, and neglected it as harmless and innocuous. I kept it at my house above a month, and gave it meat with my hand, the smaller gobbets whereof it would swallow, the greater pieces it tore asunder with its Claws. Though it drank not, yet from its Beak drops of water distilled.

In the Year 1664. we saw at *Venice* in the Palace of a certain Nobleman of the City standing upon the *Grand Channel*, a bird of this kind, which we thus described.

For bigness it equalled or exceeded any *Eagle* we have seen. The Head and Neck were destitute of feathers, only covered with a white down. From the Bill to the Eyes the skin was bare, and of a blue colour. Almost all the feathers of the body were of a pale ferrugineous colour. On the lower part of the Neck below the Down there was as it were a kind of Collar or Ruff of long white feathers. The prime feathers of the Wings and Tail were black. The Bill was large, more like a *Gulls* than an *Eagle*, the tip of it white. The Nostrils were covered with a black membrane: The *Irides* of the Eyes of a reddish hazel colour. The Nostrils turned directly downward, and from them constantly dropped a liquid humour or water. It was feathered down a little below the knee. The Feet were of a Lead colour, the Claws black, lesser, and not so crooked as an *Eagles*. The middle Toe much longer than, or further: The inside of the Legs white. The Craw hung down from the body before like a bag. It stood almost always with the Wings stretcht out like the figure of the *Vultur Leporarius* of *Gesner*.

These three descriptions I suspect to be of one and the same Bird, differing only in Age or Sex. For the first of *Aldrovandus* in most notes agrees with ours; excepting the Triangular spot in the back, which either was not in ours, or not observed by us, (which yet I scarcely believe) and that he makes no mention of any humour dropping from the nose of his, perchance because it was seen and described after it was dead. *Aldrovandus* confesses his second to be in many things not unlike to *Gesner*: But that *Gesner* and ours are the same Bird, that one note of the water distilling from the Nostrils is sufficient to evince, notwithstanding the difference of colour. I judge the first of *Aldrovandus* and ours described at *Venice*, to be of the same Sex; likewise the second of *Aldrovandus*, and that seen and described by *Gesner* to be of the same Sex, but different from that of the other two. But herein I dare not be very positive and confident.

CHAP. IV.

Of VULTURES in general.

THe Characteristic notes of *Vultures* are, 1. That for bigness they are equal to, or exceed *Eagles*. 2. That their Beaks are not presently from their first rise from the Forehead crooked and bending, but after about two Inches continued straightness; which *Gesner* saith, he himself hath observed in many sorts of *Vultures*. 3. That they have an excellent sagacity of smelling above all other Birds, so that they can perceive the favour of dead Carcasses from far, [many miles off they say.] 4. The Ancients have delivered, that they are content only with dead Carcasses, abtaining from the ravine and slaughter of living Animals. But *Belonius*, *Gesner*, and others of the Moderns affirm, that they pursue live Birds, and prey upon living Fawns, Hares, Kids, Lambs, &c. 5. That they have the neck for the most part bare of feathers. 6. *Belonius* asserts, that among all Rapacious and hook-bill'd birds *Vultures* only assemble and fly together in flocks; and that himself saw great flights of them, of not fewer than fifty in each, when he travelled from *Cairo* to Mount *Sinai*. Hence that observation of *Aristotle*, *ἡ αἰετὶς οὐδὲν ἀνθρώπων*, is proved not to hold generally true in all Rapacious Birds. 7. That their Legs are feathered down to the Feet: By which note *Belonius* thinks they are to be distinguished from other Birds of prey. But neither is this note common to all *Vultures*, *Belonius* himself representing some with naked legs; nor proper to the *Vulturine* kind; but also common to some *Eagles*, as appears by their figures and descriptions. 8. That under their throats they have a space of about an hand-breadth, clothed rather with hairs, like to those of a Calf, than with feathers. Which note we found to be true in the *Vulture* kept in the Royal Aviary in St. James's Park London. 9. That the *Crow* hangs down like a bag before the stomach or breast, which we observed in the *Venetian Vulture* or *Gypætos*, described in the precedent Chapter. 10. That the Female, contrary to the manner of other Birds of prey, doth not exceed the Male in bigness. 11. That all the inside of the Wings is covered with a soft fleece of Down; which is peculiar to the *Vulture* alone among Rapacious Birds. What is delivered of the generation of *Vultures*, viz. That there are no Males found among them: That the Females are impregnated by the Wind; that they bring not forth Eggs, but live Young, &c. is altogether false and frivolous, scarce worth the mentioning, much less the refuting. Among the marks hitherto reckoned up, the most proper Characteristic of a *Vulture* seems to me to be that of *having its neck bare or destitute of feathers*, and only covered with a Down. Those two, I am sure, which alone we have hapned to see, had not only their necks, but their heads also bare, covered only with a short white Down.

CHAP. V. §. I.

* Of several of VULTURES.

Aldrovandus out of *Belonius* and *Gesner* sets forth six several sorts of *Vultures*:

The cinereous
Vulture.
The black
Vulture.

1. The cinereous or ash-coloured *Vulture*.

2. The black *Vulture*. Of which he saith, he wonders, why *Belonius* (who boasts that he had so great opportunity and facility of seeing and getting divers sorts) should give no perfect description, neither of the one, nor the other, but only set forth a figure: which yet doth not agree to what he writes of *Vultures* in general, viz. That they all have rough legs, wholly feathered down to the foot, and do by this mark differ from *Eagles*, it being represented with naked legs.

The Batic or
Chesnut-coloured
Vulture described.

3. The Chesnut-coloured *Vulture* [Baticus] which *Belonius* thus describes: It is somewhat less than an *Eagle*, hath the feathers of its Neck, Back, Belly, and whole body of a Chesnut-colour, wherein it differs from the black *Vulture*. The greater feathers of the Wings and Train are of the same colour with those of the Black. Both [this and the black] have short tails in respect of their very long Wings. These do not, as in other Rapacious Fowl, follow the nature and constitution of the Wings, but

but rather, as in *Woodpeckers*, are found for the most part with their points broken and shattered: Which is a sign they wear and break them by rubbing against the Rocks, where they harbour and build their Nests. The *Chesnut* or *white Vultures* are more rare to be seen than the black; and have this peculiar to them, that the feathers of the Crowns of their heads are very short if compared to *Eagles*: Which is the reason why some have thought them bald. They have short legs, covered all over with feathers down to the beginning of the toes. Which note is peculiar to them, not agreeing to any other Rapacious hook-bill'd Bird, besides the Nocturnal ones. The feathers of the Neck in these *Batic Vultures* are very narrow and long (like those that hang down about the necks of *Dunghil-Cocks* and *Stares*) if compared with the rest, which cover the back, wings, and sides, which are small and broad like Scales. But those which cover the back, stomach, belly, and bottom of the rump in the *Batic Vulture* are red, in the black one black, but in both pretty broad.

4. The *Hare-Vulture*, [*Leporarium*] so called from preying upon *Hares*; of which *The Hare-Vulture.* *Gesner* writes after this manner. It hath not so * fulvous a breast as our *Golden Vulture.* *George Fabricius*, the ornament of *Germany*, denor Lion-colour. sent me its figure, with this description added. The *Vulture*, which the *German* call *Ein Hasenyr*, hath a hooked, black Bill; foul Eyes; a firm, great Body; broad Wings; a long, freight Train; a dark red Colour; and yellow Feet. Standing or sitting it rears up a Crest upon its head, as if it were horned, which appears not in flying. The Wings extended exceeded the measure of a fathom [*Orygia*]. In walking it steps or paces two Palms [hand-breadths]. It pursues all sorts of Birds; of Beasts it catches and preys upon *Hares*, *Conies*, *Foxes*, *Fawns*; it also lies in wait for Fishes. It will not be made tame. It pursues its prey not only by flying, but also by running. It flies with a great force and noise. It builds in thick and desert Woods upon the highest trees. It feeds upon the flesh and entrails of Animals, not abstaining from dead Carcasses. It can endure hunger, or abide without meat fourteen days, although it be most voracious.

5. The *Golden Vulture*, of which *Gesner* thus: Viewing the skin of the *Golden Vulture*, sent me once out of the *Alpine* Country of the *Grisons*, [*Rhetia*], the beak and legs yet sticking to it, I thus described it. This *Vulture* hath many things common with that kind of *Alpine Eagle*, (whole figure and description we placed first in the History of the *Eagle*) but is every way, or in all parts greater. From the Bill to the end of the Tail it was somewhat more than four feet and an half long, to the end of the Claws three feet and nine inches, or somewhat less. The length of the upper Chap of the Bill, as far as the opening of the mouth, was almost seven inches. The length of the Tail was about two feet and three inches. All the lower part, that is to say, the lower part of the neck, the breast, the belly and the feet were of a red colour, more dilute towards the tail, more intense towards the head. The Toes of a dusky or horn colour. The longest feather of the Wings was almost a yard long: They are all blackish or dusky, of near one and the same colour: Yet the small feathers, that are highest toward the ridge of the wing are blacker, and some of them marked with transverse reddish spots cross the middle, others with whitish ones about the bottom. So much the blacker are they by how much nearer to the back, where they shine again for blackness. The feathers on the middle of the back are black and shining, their shafts in the middle are white, especially of those which are about the middle of the back, and in half the neck; for the remaining part of the neck hath pale red [*rufus ex albido*] feathers. The tail feathers are of the same colour with those of the wings, viz. dusky.

6. The *white Vulture*, which he makes the same with the cinereous *Vulture* of *Belonius*. *The white Vulture.*

7. That *Vulture* which we saw in the *Royal Aviary* in St. James's Park, did in many things agree with the third sort or *Chesnut* [Baticus] *Vulture* of *Belonius*. Its back and wings were fulvous: Its tail short in respect of the wings: The Beak black, hooked at the end. The head and neck as far as the breast, and the middle part of the breast void of feathers, covered over with a short, soft, thick white Down. The Eyes were fierce-looking, with Saffron-coloured, or deep-yellow Irides. In the lower part of the neck was as it were a Ruff of thick-set, narrow feathers much longer than the rest, as in the *Pernopter* of *Aldrovandus*.

Our fulvous
Vulture like
Belonius his
Chesnut one.

§. II.

* *The Brazil Vulture called Urubu, by the Dutch Een Menscheneter. Marggrav. By the Mexicans Tzopiloti. F. Ximen. By Nierenberg and others Aura.*

* *Rac.*
 IT is a rapacious Bird of the bigness of a *Kite* according to *Marggravius*; of a middle-sized *Eagle* or *Raven* according to *Ximenes*: Having whitish feet like a *Hens*, a long tail, and wings longer than it. The feathers of the whole body are black, with a little ^{* *Rac.*} tawny colour here and there mingled. It hath a small head, almost of the shape of a *Turkey*, covered with a somewhat rugged or wrinkled skin. In the top of the head the skin is as it were divided long-ways, and on the left side of the head beneath the Eye is of a Saffron colour, above the Eye of a blew, also in the top; elsewhere of a reddish brown. In the right side of the head about the Eye above and beneath it is of a Saffron colour, as also in the top: Elsewhere of a delayed yellow, or whitish. It hath a pretty long Bill, hooked at the end, sharp, and covered over from the head half way with a skin from Saffron-colour tending to blue. In the middle of the Bill above is ^{* I suppose he means one common hole for both Nostrils: or a hole through the Bill from side to side.} one hole of the Nostrils, large, and situate transversely. The end of the Bill, that is bare and wants the skin, is white. It hath elegant Eyes almost of the colour of a *Ruby*, with a round black Pupil: The Eye-lids of a Saffron-colour. The Tongue carinated, and indented round with sharp teeth. Its flesh stinks like Carrion. For they feed upon dead Carcasses; and in the *Capitania* [*Chieftainship*] of *Sirigipio*, and River of *St. Francis*, when any one kills a beast, they come flying presently in great numbers. It is an ill-looking bird, always lean, and never satisfied, *Ximenes* makes it to be a kind of *Raven*, but the *Sear* or skin covering the *Basis* of the Bill, argues it to belong to the Rapacious kind, the bare head, and tip of the Bill only hooked, determine it to the family of *Vultures*. It feeds (saith *Ximenes*) upon dead flesh and mans dung. They perch at night on Trees and Rocks, in the Morning they resort to the Cities, sit viewing and watching the streets on high places, and when they spy any filth, garbidge, or dead thing, they catch it up, and devour it. Where they build or hatch their Young is hitherto unknown; although they be most frequent in almost every corner of *New Spain*. Yet *Acosta* saith, that their young ones are white, and that growing up they change and come to be as black as *Ravens*. They fly always very high, and cast a horrible stink from them like *Ravens*. They fly constantly in flocks, and sit upon trees, and feed joyntly in company upon dead Carcasses without any strife, or quarrelling, and when the rest see any one not able to move or help her self, they help her as much as they can, and bring her to the water: For being washed they recover strength to fly. If any one pursues them they empty themselves presently, that they may be the more light to fly away; with like haste casting up what ever they had swallowed. The ashes of their feathers burnt take away hairs, so that they come not again; which faculty is also attributed to the dung of *Pismires*, and the blood of *Bats*. Their skin half-burnt heals wounds if it be applied, and the flesh withal eaten; which is wont also to help those that are sick of the French Pox. The heart dried in the Sun smells like Musks. The Dung dried, and taken in any convenient Vehicle to the weight of a Drachm is profitable to melancholy persons. The Barbarous people say, that where they lay their Eggs, they compass their Nests with certain Pebble-stones, which promote transpiration: But the more probable opinion is, that they exclude their Young under ground, and take them out when they feed them, and again cover them in the earth.

CHAP. VI.

Of the lesser sort of Rapacious Birds that prey by day, called Hawks.

IT follows now that we treat of the lesser sort of Rapacious Birds that prey by day, called *Hawks*. These we have before distinguished into the more generous, which are wont to be reclaimed and trained up for Hawking. And the more sluggish and cowardly, which because they are either indocile, or unfit for Hawking, are neglected by men.

The

The former called *Hawks* are wont to be divided by Falconers into *Long-winged* and *Short-winged*. Those they call *Long-winged* whose Wings when closed reach almost to the end of the tail: Those they call *Short-winged* whose Wings when closed fall much short of the end of the tail; of which sort we have seen two greater, viz. the *Goshawk* and *Sparrowhawk*; and three lesser, viz. the three sorts of *Butcher-birds*.

But because that distinction of *Hawks* into *tame* and *wild* is arbitrary and depends upon institution; but the other into *Long-winged* and *Short-winged* hath its foundation in nature, and may be accommodated to all *Hawks* in general; we will prefer it before that, first treating of the *Long-winged* Hawks.

Hawks in respect of their age are divided by Falconers into 1. *Nyas* or *Eiaffe-Hawks*, which being taken out of the Nest, or brought away in the Nest before they can fly, are brought up by hand. 2. *Ramage-Hawks* or Branchers, which are taken when they are fledg'd and got out of the Nest, but depart not far from it, flying only from bough to bough, and following their Dams, not being able yet to prey for themselves: from *Ramus* signifying a bough. However they be taken, after they have preyed for themselves the first year, while they retain their Chicken-feathers, they are called *Sore-hawks*, from the French word *Soret*, signifying a dusky colour. The second year, when they have changed their feathers, they are called *Entermevers*, from the word *mutu* to change. The third year they are called *White Hawks*, for what reason I know not. The fourth year, when they are come to their full growth and perfection, they are called *Hawks of the first coat*; the fifth year, *Hawks of the second coat*; the sixth year, *Hawks of the third coat*; and so on as long as they live. Some of them, if they be well tended and favoured while they are young, will hold out twenty years. The feathers of all by age gradually grow whiter, as mens hairs grow grey, so that by how much the older they are, by so much the whiter are they. The outmost feather of the Wing is by our Falconers called the *Sarcel*, by the number of the dents whereof they pretend to know the age of the *Hawk*, as by the number of cross bars in the tail, the age of a *Pheasant*.

But of the manner of feeding, training up, reclaiming, and curing the diseases of *Hawks*, those that have written of *Falconry* are to be consulted.

CHAP. VII.

Of Long-winged Hawks.

Long-winged Hawks may be divided into the more *sluggish* and *indocile*, which we call *wild Hawks*, and the more *generous*, such as use to be trained up for Fowling. Those we call *wild Hawks* are the *Bald Buzzard*, the *Common Buzzard*, the *Honey-Buzzard*, the *Ring-tail*, the *Kite* or *Glead*, and the *Moor-Buzzard*. Of which in order.

CHAP. VIII.

¶ *Of the several sorts of wild long-winged Hawks, and first,*

§. I.

Of the Bald Buzzard.

THIS Bird is by *Aldrovandus* twice put among *Eagles*. 1. Under the title of *Haliaetus*, Lib. 2. Cap. 3. 2. Under the title of *Morphnus*, in the seventh Chapter of the same book.

The Bird we described weighed fifty six ounces and an half. [If herein Mr. *Willughby* be not mistaken, I see not but this Bird might well enough pass for an *Eagle*: But I suspect an error in the weight.] Its breadth, or the distance between the extremities of the wings extended was sixty Inches. The Beak from the point to the Angles of the mouth an inch and half long, black, hooked, covered from the Base as far as the Nostrils with a blewish skin or *Sear*, bunching out between the Nostrils

Its Weight,
 Breadth,
 Beak,

Nares, Nostrils and the hooked part. The Nostrils themselves are oblong and oblique. The Angle of the lower Chap [*i. e.* which the legs thereof make] round. The Eyes. The Tongue broad, soft, and like a mans. The *Irides* of the Eyes yellow; the Pupils great. It hath both an upper and lower Eye-lid, but the lower much greater. The Eyes are not so sunk in the head, or withdrawn under prominent brows, as in the common Buzzard, but more extant.

The Bird it self seems to be much stronger and more valiant than the Buzzard, with which it agrees in the colour of the upper part being black and ferrugineous. The feathers on the crown of the head are white, whence it took the name of *Bald Buzzard*: The throat, breast and belly white, but above the Crop the feathers are ferrugineous. The Legs are clothed with white and soft feathers. The primé or flag-feathers in each Wing are about twenty eight; from the seventeenth they end in sharper points: The greater are the blacker. The four outmolt have the lower half of their interior Vanes twice as broad as the upper: The interior Vanes of all are variegated with white and black alternately, indented like the teeth of a Saw. The feathers under the shoulders are white, marked with black spots toward the tips. The third and fourth row of those that cover the roots of the flag-feathers underneath are elegantly marked toward the tips with dusky spots, having their edges ferrugineous. The lesser feathers above these are white, the greater beneath them dusky or brown. The Train is made up of twelve feathers of equal length, having their borders partly-coloured of white and ferrugineous, indented as in the Wings.

The Legs are long: The Feet thick and strong, of a pale blue or Verdigrise colour. The middle Toe the biggest; the outermolt somewhat bigger than the inner; the back-toe, as in all, the least; all armed with great, semicircular, black, round Talons. The feet scaly and uneven. The sole of the foot rough, that it may more easily hold its prey, when it hath once caught it. The Toes are so disposed, that the outmolt of the fore-toes may bend or turn backwards, as in *Owls*, *Parrots*, &c.

The Liver, Heart, and Gall are large: The Spleen round, and of a black or fordid colour. In the Stomach and Crop opened we found many fish-bones and scales. The Surface of the *Echimus* or ante-stomach, was full of many caraneous Globules. The Guts were long, slender, or small, having many revolutions.

It haunts Rivers, Lakes, and great Pools of water, as also the Sea-shores. At *Pen-sans* in *Cornwal* we saw one that was shot, having a *Mullet* in its Claw: For it preys upon fish; which seems very strange and wonderful; fith it is neither whole-footed, nor provided with long legs or neck.

It builds upon the ground among Reeds, and lays three or four large white Eggs, of a figure exactly Elliptical: lesser yet than Hens Eggs.

It calls an ill strong sent, and is much infested with Lice. It differs from the *Sea-Eagle* of *Aristotle*, in that the neck is not thick and big, but for the bulk of the body slender and small.

What *Aldrovandus* hath delivered of Eagles, *viz.* that the right foot is bigger than the left, doth not agree to this, for its feet are equal.

It is distinguished from the common Buzzard. 1. By its weight and bigness, wherein it exceeds that. 2. That its Wings are longer. 3. By this most sure mark, that the outmolt of the fore-toes in this may be turned backward, but not in the common Buzzard. 4. By the angular processes of the upper Chap of the Beak. 5. By the blue colour of the legs and feet.

§. II.

Of the common Buzzard or Puttock, called in Latine Butco.

It is about the bigness of a Pheasant or young Pullet. Its weight was thirty two ounces. Its length from the tip of the Beak to the end of the tail twenty one inches: Its breadth, the Wings being stretched out, fifty two inches. The Head great: The Crown broad and flat: The Beak short, hooked, and of a dark blue. A yellow skin covers the upper Chap from the root beyond the Nostrils. The Bridle of the mouth, or the skin of the corners, is also yellow. The Nostrils are round, [yet in one Bird of this kind we observed them long and bending.] It gaped wide. Its Tongue was thick, fleshy, blunt, as in the rest of this kind. Being angry it opened its mouth, and held its Tongue stretched out as far as the end of its Bill. The roof of the mouth bath in it a hollow equal to the Tongue. The Angle of the lower Chap is circular.

circular. The Eyes are great, the *Irides*, or circles encompassing the Pupil, white, with a dash sometimes of yellow, sometimes of red; sometimes they are of a whitish colour without mixture of any other. The lower Eye-lid downy. The Membrane for Nictation blue.

The colour of all the upper part a dark fulvous approaching to black, or a ferrugineous black. In some birds of this kind we observed many white spots in the covert feathers of the Wings; which in the Wings spread made a kind of white line: The like white spots it had in the long feathers springing from the shoulders, which cover the whole back. The edges of these feathers were of a dirty yellow. The lower side of the body was of a dilute yellow, or yellowish white; the breast stained with oblong ferrugineous spots, not transversely placed, but tending downwards, in each feather drawn according to the length of the shaft. The Chin is of a ferrugineous colour, the shafts of the feathers being black. Between the Eyes and Nostrils grow long black bristles. On the middle of the back grow no feathers, but only down; for the scapular feathers cover the whole back.

The flag-feathers in each Wing are about twenty four in number: The outmolt of which is shortest, the third and fourth (counting from it) longest. The tips of the four outmolt are blacker and narrower than those of the rest: For the tips of the rest are white. The interior webs of all are variegated with broad, transverse, dusky, and whitish strakes or bars, after the manner of those of a Woodpecker or Woodcock. The under-side of the Wings, excepting the tips of all the flags, and the third part of the five outmolt feathers, is white varied with transverse parallel lines. The Wings closed reach almost to the end of the Train. The Train is nine or ten inches long, made up of twelve feathers, not forked, but when spread terminating in a circular circumference. The utmost tips of its feathers are of an ash-colour; then follows a transverse black line of an inch breadth, the remaining part being variegated with black and cinereous transverse spaces or bars, only the bottoms of the feathers white.

The Thighs are long, strong, and fleshy: The Legs short, thick, and strong, feathered down a little below the Knees. The Legs and Feet yellow, and covered with Scales. The outmolt toe joyned below to the middlemolt by a membrane for some space. The Talons strong, long, and black; that of the outmolt fore-toe the least, that of the back-toe the biggest.

The Liver is divided into two lobes, having a large Gall: The Spleen of an Oval figure. It hath but two Testicles. The stomach is large, not muculous but membranous, that is not fleshy, like the Gizzard of a Hen or Turkey, &c. but skinny like those of beasts.

It feeds not only upon Mice and Moles, but also upon Birds: For out of the stomach of one that we opened we took a small Bird entire, and out of the stomach of another even a Thrush. It is a great destroyer of *Canies*: Yet for want of better food it will feed upon Beetles, Earth-worms, and other Insects.

The heads of these Birds are said to grow *cinereous with age, and the feathers of their backs white. But whether it come to pass by reason of Sex, or Age, or other accident, certain it is they differ very much one from another in this respect: For whereas some have no white feathers neither in head, back, nor wings; others have very many.

Buzzards Eggs are white, stained with a few great reddish spots, yet sometimes all over white without spots.

That sort of Hawk (as *Pliny* witnesseth) which the *Romans* named *Butco* was by the *Grecians* called *Triorches*, from the number of its stones. *Aldrovandus* also saith that in a Buzzard dissected he had observed three stones. The third stone appeared not to us, though we diligently sought it. *Aldrovandus* also himself saith, that he would not very much contend with him that shall obstinately deny that third glandulous body (which besides the two stones he had noted, adjoining to them) to be a true Testicle.

§. III.

The Honey-Buzzard.

The Bignefs, Weight, Dimenfions. For bignefs it equals or exceeds the common *Buzzard*, is alfo like it in figure or fhape of body, unlefs perchance it be fomewhat longer. It weighed thirty one ounces. The length from Bill-point to Tail-end was twenty three Inches, to the points of the Talons not more than nineteen. Its breadth or the diftance between the ends of the Wings fpread fifty two Inches. Its beak from the tip to the Angles of the mouth was an inch and half long, black, and very hooked, bunching out between the nofthrills and the head: The Bafis of the upper Chap covered with a thick, rugged, black fkin beyond the Nofthrills, which are not exactly round, but long and bending. The mouth, when gaping, very wide and yellow. The Angle of the lower Chap, as in other *Hawks*, femicircular. The *Irides* of the Eyes of a lovely bright yellow or *Saffron* colour.

The Mouth. The mouth, when gaping, very wide and yellow. The Angle of the lower Chap, as in other *Hawks*, femicircular. The *Irides* of the Eyes of a lovely bright yellow or *Saffron* colour.

The Eyes. The head is afh-coloured: The Crown flat, broad, narrow toward the Beak. The bottoms of the Plumage in the head and back white, which is worthy the noting, becaufe it is common with this to many other *Hawks*. The back is of a ferrugineous colour [or rather a Moufe-dun.] The tips of the flag-feathers, as alfo thofe of the fecond and third rows in the wings white. The Wings when clofed reach not to the end of the tail. The number of flags in each Wing twenty four. The Tail confifts of twelve feathers, near a foot long, variegated with tranfverfe obfcure and lucid, or blackifh and whitifh fpaces, rings, or bars. The very tips of the feathers are white, below the white is a crofs black line; under that a broad dun or afh-coloured fpace or bed (the like whereto alfo croffes the wings, which differ not much from the tail in colour.)

The colour of the lower part. As for the lower fide of the body, the feathers under the chin and tail are white; the breaft and belly alfo white, fpeckled with black fpecks, drawn downward from the head toward the tail.

The Feet and Talons. The Legs are feathered down fomewhat below the knee, fhort, ftrong, yellow, as are alfo the feet. The Talons, long, ftrong, fharp, and black.

The Guts and Stomach. The Guts fhorter than in the former: The * *Appendices* thick and fhort. In the ftomach and guts of that we diffeded we found a huge number of green Caterpillars of that fort called *Geometrae*, many alfo of the common green Caterpillars and others.

The Nef. It builds its Nef of fmall twigs, laying upon them wool, and upon the wool its Eggs. We faw one that made ufe of an old *Kites* Nef to breed in, and that fed its Young with the * *Nymphae* of Wafps: For in the Nef we found the Combs of Wafps Nests, and in the ftomachs of the Young the limbs and fragments of *Wafp-Maggots*.

The Young. There were in the Nef only two young ones, covered with a white Down, fpeckled with black. Their Feet were of a pale yellow, their Bills between the Nofthrills and the head white. Their Craws large, in which were *Lizards*, *Frogs*, &c. In the Crop of one of them we found two *Lizards* entire, with their heads lying towards the birdmouth, as if they fought to creep out.

Food. This Bird runs very fwiftly like a Hen. The Female as in the reft of the Rapacious kind is in all dimenfions greater than the Male.

How it differs from the Buzzard. It differs from the common *Buzzard*, 1. In having a longer tail. 2. An afh-coloured head. 3. The *Irides* of the Eyes yellow. 4. Thicker and fhorter feet. 5. In the broad tranfverfe dun beds or ftroaks in the wings and tail; which are about three inches broad.

The Eggs of this Fowl are cinereous marked with darker fpecks. It hath not as yet (that we know of) been defcribed by any Writer, though it be frequent enough with us.

§. IV.

Of the Ring-tail, the Male whereof is called the Henbarrier.

The Weight, Length, Beak. The Female, though lean, weighed fixteen ounces. From the point of the Beak to the end of the tail, it was by meafure twenty inches long: From tip to tip of the wings extended was forty five inches. The Bill from the tip to the corners of the

the Mouth an inch and half long. Above the Nofthrills and at the corners of the Jaw grow black bristles reflected forward.

From the hind part of the Head round the Ears to the Chin a ring or wreath of a Coronet. feathers ftanding up, having their middle dusky, and their edges of a reddifh white, encompass the head as it were a Crown. From this wreath hangs down a naked fkin covering the ears. The back is of a dark ferrugineous colour, the edges of the neck feathers reddifh: In the crown of the head left red. The bottoms of the feathers in the hind-part of the head white. Under the Eyes is a white fpot. The belly and breaft of a dilute reddifh colour [or white with a Tincture of red] marked with long dusky fpecks, tending downward along the fhaft of the feather. The middle of the throat of a dusky or dark ferrugineous colour, the edges of the feathers being red. The Rump hath fome white feathers, marked in the middle along their fhafts with oblong ferrugineous fpecks.

The number of flag-feathers in each wing was twenty four, the exterior webs whereof were of the fame colour with the back, the interior being variegated with tranfverfe black and white ftroaks alternately fiteate. In the exterior and greater feathers the white ftroaks are bigger and broader; in the interior and leffer the black: In the inmoft the whole web is dusky, the white by degrees growing darker and darker, till at laft it comes to be wholly brown or dusky. The tips of the exterior feathers in the fecond row are white, of the interior red; the reft of them being of the fame colour with the back.

The Tail is ten Inches long, made up of twelve feathers: The tips whereof are of a reddifh afh-colour; to which fucceed alternately red and black bars, the black being much the broader. In the two middle feathers the red doth altogether difappear, the feathers being wholly black.

A yellow fkin covers the upper Chap, reaching from the root of the Bill beyond the Nofthrills: Elfe the Bill is black, hooked, and prominent. The lower Mandible ftreight. The Mouth wide when gaping. In the Palate is a Cavity equal to the Tongue. The Tongue broad, fiftly, and undivided: Both Tongue and Palate black. The Angle of the lower Chap, as in others of this kind, round. The border of the Eye-lids round the Eyes yellow.

The Feet yellow, the Talons black. The outmoft Toe for fome fpace from the divarication is joyned to the middlemoft by an intervening membrane. The middle Toe longeft, the inmoft fhorteft, but the Claw of the outmoft leaft. The Legs long.

It hath a great Craw: Small, round, tumid, blind Guts: A large Gorge, in that we opened full of feathers and bones of birds: A Gall joyned to the Liver. Its Eggs were as it were befmeared over with red, the white here and there appearing from underneath it.

The Male or Tarcel of this kind differs very much from the defcribed, not only in magnitude, but alfo in colour. It is called in *Englifh* the *Henbarrow* or *Henbarrier*. The head, neck, and back are of an afh-colour, like that of a *Ring-dove*. The long feathers growing on the fhoulders are fomewhat dusky. The Rump not fo white as in the Female. The Breaft white, with fome tranfverfe dusky fpecks. The two middle feathers of the Tail cinereous, from the middle to the outmoft the colour is more languid and dilute, inclining to white; all but the middle ones marked with tranfverfe blackifh bars. The exterior flag-feathers of the Wings are black, the tips being afh-coloured, and the bottoms white. The outfide of the reft is cinereous, only their inner limbs or borders white. The covert feathers of the upper fide of the Wings cinereous, of the nether fide white; the fhafts of the interior being black. The firft row of the covert feathers of the infide of the Wing have tranfverfe dusky fpecks. The Legs are long and very fflender, beyond the proportion of other *Hawks*. In other points it agrees for the moft part with the Female. We fuppofe this Bird may be the *Pyrgargus* of *Bellonius*. I fufpect that *Aldrovandus* makes of this Hawk differing in Age or Sex two or three Species. The defcription of that carnivorous Bird he calls *Palumbo fimilis* agrees exactly to this: The defcription alfo of *Lanius* in the Fifth Book, eleventh Chapter of his *Ornithology* answers in molt particulars: And therefore we have taken the figure thereof for it.

§. V.

The Kite or Glead: Milvus caudâ forcipatâ.

Its Weight
and measures.

The colour of
the upper
part.

The colour of
the nether
side.

The first row
of Wing-fea-
thers.

The Tail.

The Beak,
Tongue,
Scar,
Eyes.

The Feet,
Toes and Tal-
ons.

The Entrails.

Manner of
flying.

Her Tail
serves her for
a Rudder, to
direct her
flight.

Kites said to
be Birds of
passage.

It weighed forty four ounces. Its length from the point of the Beak to the end of the Tail was twenty eight inches. The Wings extended were equal in breadth to fifty four Inches. The Beak from the tip to the corners of the mouth was two inches long. The upper Chap hung down half an Inch.

The Head and Chin are of a pale ash-colour, varied with black lines along the shafts of the feathers. The Neck red, the middle part of the feathers being black. The Back dusky or brown like a *Buzzard*. The feathers next the Tail of the same colour with it, having their middle parts or shafts black. The lesser rows of Wing-feathers are party-coloured of red, black and white; the middle part of each feather along the shaft being black. The long Scapular feathers covering the Back have black lines like the flags. The feathers covering the inside of the Wing are red, with black spots in their middles. The Plumage of the lower side hath the edges ash-coloured, then follows red, the middle part being black: The black part is by degrees less and less from the Chin to the Tail; so that under the Tail only the shafts of the feathers are black: The red colour is also more dilute toward the Tail.

The flag-feathers of the Wings are in number twenty four, of which the five outmost are black, the next six are of a dark cinereous colour; all the rest to the last are again black; the last are particoloured of red, white, and brown. All but the five or six exterior feathers have in their outward webs black transverse lines, the spaces between the lines being whitish, especially from the sixth to the eleventh. The foremost of the second row of Wing-feathers are black; as also the bastard Wing. The Wings closed are longer than the middle feathers of the Tail shorter than the outmost.

The Tail is forked, the middle feathers being eleven Inches long, the outmost fourteen. The colour red [*rufus*]. The extreme feathers blackish: All but the two middlemost have black, cross lines, the middle spaces or distances being whitish. The tips of all are white.

The Bill is black, having scarce any tooth-like *Appendices*: The Tongue broad and thick, as in other carnivorous Birds. In the Palate there is a Cavity equal to the Tongue. The Scar or skin about the Nostrils is yellow. In the roof of the mouth is a double cranny or hole. The Eyes are great: The *Irides* of a pale, but lovely yellow.

The Legs and Feet yellow: The outmost foretoe joyned to the middle one by a Membrane, reaching almost half way. The Talons black; that of the back-toe being the greatest. The Talon of the middle toe hath a sharp edge on the inside.

It hath a great Gall; a large Craw. The straight gut below the *Appendices* is much dilated, as in other of this kind.

Spreading its Wings it so balances itself in the Air, that it can rest as it were immovable a long time in the same place; yea, without at all, or but rarely moving its Wings, it glides through the Air from place to place; whence perchance it took its English name *Glead*.

By the figure of its Tail alone it is sufficiently distinguished from all other Birds of prey we have hitherto seen.

This sort of Birds (saith *Pliny*) seems to have taught men the Art of steering a Ship by the turning of their Tails; Nature shewing in the Air what was useful to be done in the Deep. For hence (as *Aldrovandus* goes on) it is probable that men learned to apply a Rudder; viz. When they saw the *Kite*, by turning her Tail sometimes this way, sometimes that way, to direct or vary her course, and turn about her body at pleasure; they also attempting somewhat like, added the Helm to the Ship, by winding and turning whereof to and fro they could direct and impel it whither they pleased, which otherwise would be driven uncertainly and at random by the Winds and Tides.

Kites they say are Birds of passage, shifting places according to the seasons of the year. When I was once (saith *Belonius*) on the shore of the *Euxine* Sea, on *Thrace*-side, about the latter end of *April*, on a certain very high Hill, near to that Pillar which is at the mouth of the *Bosphorus*, where a Fowler had spread Nets for catching of *Sparrow-Hawks*, which came flying from the right side of the Sea; we observed

served *Kites* coming thither in flocks, and that in great numbers, that it was a miracle to us. For being as it were astonished at the strangeness of the spectacle, we could not conceive where such a multitude of *Kites* could get themselves food. For should they for but fifteen days space fly continually that way in such numerous squadrons, I dare confidently affirm, they would exceed the number of men living upon the Earth. Howbeit, with us in *England* they are seen all the year, neither do they fear or fly our Winters.

Pliny writes, that *Kites* feed upon no other meat but flesh: But *Belonius* affirms, That in *Cyrrus* a City of *Egypt* he hath seen them light upon *Palm-trees*, and eat the Dates, But no question they do so only being compelled by hunger, and for want of their natural and familiar food. They are very noisom to tame birds, especially *Chickens*, *Ducklings*, and *Goslings*; among which espying one far from shelter, or that is carefully separated a good distance from the rest, or by any other means lies fit and exposed to rapine, they single it out, and fly round, round for a while, marking it; then of a sudden dart down as swift as *Lightning*, and catch it up before it is aware, the Dam in vain crying out, and men with hooting and stones scaring them away. Yea, so bold are they, that they affect to prey in Cities and places frequented by men; so that the very Gardens, and Courts, or Yards of houses are not secure from their ravine. For which cause our good Housewives are very angry with them, and of all birds hate and curse them most.

The *Grecians* call it, *ἰκτίον*, and *ἰκτιό*, but more commonly *ἰκκ*.

§. VI.

The More-Buzzard: Milvus Æruginosus Aldrov. an Circus Belloni?

It is lesser than the *Buzzard*, of about the bigness of a *Crow*. The Head is not so great, nor the Crown so flat and broad as in a *Buzzard*. Its length from the point of the Bill to the end of the Tail is more than twenty Inches. The distance between the tips of the Wings spread fifty Inches. The Beak about an Inch and half long, hooked, covered at bottom with a yellowish green skin or Scar; else black. The Nostrils not round but long, of the figure of a *Guiny Bean* or Kidney. The Mouth within side partly black, partly blewish. The Tongue broad, fleshy, soft, as in other birds of prey. The hole or cleft in the Palate wide and open. The Eyes of a mean size, having yellow *Irides* [in the bird that I described at *Rome*: But Mr. *Willughby* writes, that they are between an Ash and Hazel colour.]

The Crown of the head is of a kind of clay colour, [of a pale fulvous, or between yellow and *rufus*] variegated with black lines, viz. the shaft of each feather being yellow and *rufus*. The colour of the whole body, as well lower as upper side is a dark ferrugineous, only at the middle joyn of both Wings there is a spot of the same reddish clay-colour [ex fulvo albicans] with the head, and the feathers at the root or rise of the tail are fulvous.

The Wings closed reach almost to the end of the Tail. The number of flag-feathers in each Wing is twenty four. These are blacker than the rest of the feathers: The outmost is above a hand-breadth shorter than that next to it. The covert-feathers of the underside of the Wing are particoloured, brown and fulvous. The Tail is about nine Inches long, made up of twelve feathers of equal length when it is spread, terminated in a circular Circumference, being particoloured of a dark and light fulvous or bay. The Legs are about an hand-breadth long, feathered down a little below the knee, longer and slenderer for the bigness of the bird than in others of this kind. The Legs and Feet yellow; the Talons black. The outer Toe in joyned to the middle by an intermediate Membrane, reaching from the divarication up almost half way. The Talon of the middle Toe is thinned on the inner side into an edge. The Gall is large: The blind Guts short and small: The Stomach membranous; in that we dissected full of the limbs of Birds and other flesh.

The Bird here described we suppose to be that called in *England* the *More-buzzard*, common to be seen in Heaths and Waits; sitting upon small trees and shrubs: With long slender yellow Legs: The whole Body of a dark colour, the interior *Remiges* being paler or whitish; and which is said to build in Fenny places.

I take this Bird to be the same with that *Belonius* describes under the title of *Circus*, as will appear to any one that shall compare the descriptions; although *Aldrovandus* makes them to be distinct Species, treating of them in several Chapters.

This Bird is sufficiently characterized by its uniform brown-bay or ferrugineous colour all the body over.

§. VII.

* The Brazilian Kite called Caracara, and by the Portuguese Gaviaon. Maigrav.

* Sparrow-hawk.

It is a kind of * *Nisus* of the bigness of a Kite; hath a Tail nine Inches long. The length of the Wings is fourteen Inches; which yet do not reach to the end of the Tail. The colour of the whole Plumage is tawny with white and yellow specks. The Tail is particoloured of white and brown. It hath a Hawks Head, a hooked Bill of a moderate bigness, and black colour. It hath yellow Legs; Hawks Feet; semicircular, long, sharp, black Talons. It is very noisom to Hens.

I had (saith he) another of the same magnitude and colour with the precedent, save that the breast and belly were white. The Eyes of a gold colour, and the skin about them yellow. The Legs yellow.

For the bigness, colour, and preying upon Poultry, we have subjoyned this to the Kites notwithstanding *Margravins* maketh it a kind of *Nisus* or Sparrowhawk.

CHAP. IX.

Of long-winged Hawks, used to be reclaimed for fowling.

§. I.

* Of the Peregrine Falcon.

* Family or kind.

Its Name,

Its Shoulders,
Wings,
Train.

The Feet,

Toes,

Talons,

Thighs,

Beak,

Nares,

Eyes,

Head,

Its Neck,

Breast,

Brows,

Eyes,

Head,

Back,

MR. Willughby having left no description of a Falcon, and it having not been our hap since his decease to see any Hawk of that kind, left the Ornithology we set out should be defective and imperfect in this particular, we have borrowed of *Aldrovandus* the descriptions of the several sorts of Falcons without omitting any. We are not a little troubled that we cannot give any light to this * *Genus*: For we vehemently suspect, that *Species* are here multiplied without necessity.

Aldrovandus assigns the first place to the Peregrine Falcon for its courage and generosity. It took its name either from passing out of one Country into another, or because it is not known where it builds, its Nest having not been any where found. Of this kind *Belisarius* makes two *Species*, *Carcanus* four, the difference being taken from the colour.

A Peregrine Falcon every way compleat must have these marks, Broad and thick shoulders; long Wings reaching to the end of the Train; the Train long, narrower by little and little, and sharper toward the end, like a Sparrow-hawks, made up of large, thick, round feathers, the tip not altogether white; the shafts running along the middle of the feathers of a lovely red; the Feet of the same colour with those of a *Bittour*, viz. of a pale green, or between a yellow and lead-colour; the Toes slender; the Talons large, black, and very sharp; the colour of the Feet and Beak the same; the Thighs long, but the Legs short; the Beak thick; the Mouth wide; the Nares large and open; the Eye-brows high and great; the Eyes great, and deep sunk; the Head arched, the Crown being gently elevated and round. As soon as it can fly it should shew certain little bristly feathers, standing out as it were a beard. Let the Neck be long, the Breast broad, and about the Shoulder-blades where it joins to the Neck somewhat round. Sitting upon the Fift it must bend its body a little backward, being brisk, mordacious and greedy. Let its Eye-brows and Cheeks be white with a little mixture or dash of red: The Eyes black, encompassed with a Circle or Iris that is sometimes blue; the Head ash-coloured, like that of a *Sacre*: The Back of somewhat a livid colour, almost like that of a Goose; covered with round and broad feathers. The marks of the Wings agree to the second Peregrine Falcon of *Belisarius*, which he makes to be of a Copper [*Aeneo*] colour. For the first kind, which he saith is blacker, hath neither an ash-coloured Crown, nor a yellow; and hath its throat spotted with long, direct, black lines; and its Thighs marked with transverse ones: Its Legs also are of a Saffron colour, but more dilute.

Aldrovandus

Aldrovandus describes a Bird of this kind, taken in the Mountains of the Territory of *Bononia*, in these words. From the top of the Head to the end of the Tail it was seventeen Inches long. The Crown of the head flat and compressed: The Beak an Inch thick, of a lovely sky-colour, bending downward with a sharp hook, short, strong, joyned to the head with a yellow Membrane of a deep colour, which compasses the Nostrils; the Eye blue, the edges of the Eye-lids round yellow. The Head, Neck, Back, Wings of a dark brown, almost black, sprinkled with black spots in almost every feather, the great feathers being crossed with transverse ones.

The Throat was of a yellowish white, the lower part thereof being stained with black spots, as it were drops drawn out in length from the corners of the Mouth on each side a black line was drawn downwards almost to the middle of the Throat or Gullet. The Breast, Belly, and Thighs white, crossed with broad, transverse, black lines. The tips of the Wings, when closed, reached almost to the end of the Train. The Train less dusky, marked also with black cross bars. The Legs and Feet yellow; the Thighs long, the Shanks short; the Toes slender, long, covered with scales, as are also the Legs; the Talons black, and very sharp.

Aldrovandus thinketh this black Peregrine Falcon not to differ at all from the black Falcon simply so called, or the *Falconarius* of the Germans, but to be the very same with it.

What *Aldrovandus* hath concerning the place, flight, conditions, manner of catching this Hawk &c. See in his * *Ornithology*. It flies and preys upon Geese, Ducks, and other Water-fowl.

§. II.

* The *Sacre*, Falco Sacer.

Aldrovandus brings several descriptions of the *Sacre* out of *Albertus Magnus*, *Belisarius*, the Emperour *Frederick*, *Carcanus* and *Belionius*. The Emperour *Frederick*'s description (which to me seems better than that of *Albertus*) is as follows.

Sacres for bigness of body approach to *Fer-Falcons*; being greater than other *Falcons*, but lesser than *Fer-Falcons*. They have a great round head: A shorter Beak, a slenderer and longer body in proportion, longer Wings, and also a longer Train, a Breast less fleshy and full in respect of their body than *Fer-Falcons*: And also shorter Toes.

Belionius thus briefly describes it. The *Sacre* hath fouler feathers to look upon than any other Bird of prey. For they are of a colour between red and * fuliginous, very like to Kites. It hath short Legs and blue Toes.

Carcanus the *Vicentine* gives a fuller description of it in these words. The *Falcons* called *Sacres* are bigger than even the larger *Peregrines*. Their head is very grey; their Crown flat, and like to that of a fork-tail'd Kite. Their Eyes black and great: Their Beak blue; their Nares for the most part small: The figure of the body oblong: The spots of the Breast brown, as is also the back and upper side of the Wings: The inside of the Thighs white; the Train long and varied with semicircular spots, resembling the figure of *Gaius Beans* or Kidneys: The Wings also large and long. The Legs and Feet are almost wholly blue: Compared with the rest of the body not very great. Those of one year commonly called *Sores* differ a little from those that have mewed their feathers. For these have the spots of their Breasts a little blacker and rounder than the *Sores*. Their Feet also are somewhat white, and in some spotted with a little yellow. Almost all of them have their Backs reddish, inclining to cinereous, as in *Turtles*. Yet in some, as well of the *Sores* as of those that have mewed their feathers, the Back and upper side of the Wings is black.

Which of these descriptions agrees best to the *Sacre* let them judge who have opportunity of seeing this Bird, and will, and leisure to compare them with it.

So great is the strength, force, and courage of this Hawk, that (as *Albertus* reports) there is no Bird so great which she doth not presently strike down: And not only one at a time, but as many as come in her way. She catches also Fawns, Kids, &c. She is supposed to be called *Sacre*, either from her bigness, or because all other birds fear her, and fly from her.

§. III.

§. III.

* The Jer-Falcon, whose Male or Tarcel is called the Jerkin.

IT seem to take its name from the *High Dutch* word *Gyr-falc*, i. e. a ravenous Falcon, or *Vulturine Falcon*: for *Gyr* in *High Dutch* signifies a *Vulture*.

This, however *Aldrovandus* contradicts it, exceeds all other *Falcons*, even that called the *Sacre* in magnitude. Of that which *Aldrovandus* described this was the shape: The Crown was plain and deprefsed, of an ash-colour. The Beak thick, strong, short, blue; bowed downward with a mean-sized hook, but very sharp, strong, and blewish. The Pupil of the Eyes very black, the *Iris* or Circle encompassing the Pupil blue. The Back, Wings, Belly, and Train were white: But the feathers of the Back and Wings were almost every one marked with a black spot, imitating in some measure the figure of a heart, like the Eyes in a *Peacocks* tail. The flag-feathers of the Wings near their tips beautified with a bigger and longer black mark, which is yet enclosed with a white margin or border. The Wings very long, so that they wanted but little of reaching to the end of the Tail. The Throat, Breast, and Belly purely white, without any spots at all. The Tail not very long, yea, in respect of its body and those of other *Falcons* rather short, marked with transverse black bars. The Legs and Feet of a delayed blue. The Legs thick and strong. The Toes long, strong, broad-spread, covered all over with a continued Series of board-like Scales.

Of *Gyr-falcons*, according to *Carcanus*, there be divers kinds, distinguished by the colours of their feathers.

Frederick the Emperour doth thus describe the shape of a good *Jer-Falcon*. The upper part of the Head must not be raised upward into a bunch, but every where equal: The forepart of the Head large and broad; that part also above the Eyes large: The Eye-brows high or standing out [*eminentia*.] The Eyes hollow: The Nostrils great and open: The Beak thick, crooked, and hard: The Neck toward the Head slender, toward the shoulders thick. The Body must grow uniformly narrower and sharp all along to the very Tail, observing that form which *Geometricians* call *Pyramidal*. It must have Wings elevated toward the back, not hanging down, but when gathered up, near the Tail so lying one upon the other, that they intersect one another in form of a Cross. The beam-feathers of the Wings, as well those that cover, as those that are covered, that is, as well the upper as the under ones must be broad and hard. The covering feathers by how much the more they cover the others, by so much the more commendable are they. The Tail-feathers when it doth not fly are gathered up in a lump under the two uppermost [that is, the middlemost] which are called the coverers. The Gullet [*Gula*, I suppose he means the *Craw*] must be large and deep, and after much meat taken in, swell a little, and be round when full of meat: The Breast prominent outward, fleshy, and thick. The Thighs great: The Legs short and thick: The soles of the Feet also thick and large; the Toes long, lean, rough, scaly, and well spread: The Talons slender, crooked, and sharp.

It is a courageous, fierce, and very bold Bird, catching all sorts of Fowl how great soever, and is terrible to other *Falcons* and *Goshawks*. Its chief Game are *Cranes* and *Herons*.

§. IV.

* The Mountain Falcon:

THe greatest part of these *Falcons* are of a mean stature: Few found very big: Many of a small body, and that in some round, in some long. *Albertus* attributes to a *Mountain Falcon* almost the same bigness as to a *Goshawk* [*Astur*] only makes it shorter bodied: Gives it a round Breast, and when it stands on its feet a *Pyramidal* figure, resembling a *Pyramid* somewhat compressed on that side the back makes. Almost all of them have a round Head, a taper [*fastigiatum*] Crown, and black, encompassed with a kind of ash-coloured Coronet: In the Forehead, not far from the Beak, stand up certain very fine and slender feathers, as it were hairs, among the black or brown ones, which yet are but few, and in some Birds none at all. They have a thick, short, black Bill; narrow Nostrils; small Eyes and Eye-lids. The

Throat

Throat as far as the breast-bone is somewhat whitish, besprinkled with good great spots. The rest of the Breast is beautified with certain marks, which are sometimes ferrugineous, sometimes red, sometimes blackish, and besides these with other smaller specks. In some the Throat and Breast are clothed with black feathers; the inside of the Thighs black: The Back and Loins covered for the most part with small brown feathers: Some of which below the middle of the back have certain whitish or reddish lines tending downwards. Others have their Backs purely ash-coloured, or of the colour of that sort of *Wild Geese*, which the *Vicentines* call *Balotta*: The Wings not long like a *Peregrine*: The Tail also shorter than theirs, and for the greater part variegated like that of a *Kestrel*. There are some whose Tail is like that of a *Sacre*, but they are very rare. They have for the most part their Legs and Feet of a Saffron colour; but some of a straw colour; and covered with very thick-set Scales. Their Feet are lesser than the *Peregrines*: Their Toes great and fleshy: Their Talons black. It is easier to know them after they are mewed. Their Head is black like a Crow, their Nostrils covered with a Saffron-coloured skin; the Eyes also encompassed with a Circle of like colour: Their Neck and Shoulders black; the lower part of the Back toward the Rump blue. The Throat as far as the Breast-bone white; but in some it shews an obscure red; in others it is blackish, in all marked with round spots. The Train short and black: The feathers investing the Thighs brown. The Legs strong. It is to be observed, that by how much the oftner they have mewed their feathers, by so much is their Throat [*Gula*] whiter, and its spots smaller, and the feathers covering their Back and Loins of a deeper blue.

Tardius writes, that it preys only upon great birds, neglecting the smaller; that it is very ravenous, mordacious, and of an indolent nature. *Aldrovandus* describes a bird of this sort that was brought to him, in these words. It was eighteen Inches long: The Head great, the Crown gently towering up round: The Beak thick, short, black, strong; of an Inch thickness, the point of the hooked part not very sharp, but it strong; so that I doubt whether any other *Falcon* hath a stronger, thicker, and more strongly made and compacted Beak than this. The Nares are compassed with a yellow membrane. The *Iris* of the Eye of a deep black. The edges of the Eye-lids encircling the Eyes yellow. The whole body in general is of one colour, viz. a cinerous tending to blue, lighter or darker, according to the different exposing of the parts to the light. The Neck, Breast, Belly, and Back, and consequently the whole body is very gross, thick, round, and plump. The Breast very round and great: The beginning of the Wings above broad, and less sharp than in other *Falcons*; their tips reaching to about the middle of their Trains, or a little further. The Train of a middle size, between long and short. Their Legs and Feet in respect of their bodies not very large or thick, covered with Saffron-coloured board-like Scales. Their Talons deep-black.

§. V.

* The Falcon Gentle.

WHERCAS I find that some doubt, whether the * *Gentile Falcon* be a distinct kind from the *Peregrine* or no: And whereas the Emperour *Frederick* distinguishes *Gentile Falcons* into those absolutely and simply to be called, and *Peregrines*; omitting that prolix description of a *Gentile Falcon*, which *Aldrovandus* brings out of *Frederick*; I shall only propound the marks whereby this is said to differ from the *Peregrine*.

Gentile Falcons are less than *Peregrines*, have a rounder and lesser Head; a shorter Beak; and Feet also for the proportion of the body smaller. Besides, the colour is less bright, lively, and fair in these than in those. When they have mewed their first feathers, they become very like the *Peregrines*, but more spotted in their Trains and Backs.

Belisarius makes the only difference between the *Gentile* and *Peregrine Falcon* to be in their manner or gesture in flying: For the frequent agitation of the Wings in flying shews the *Hawk* to be a *Gentile Falcon*: The motion of the *Peregrines* Wings being like that of the Oars of Gallies. Moreover, they differ from *Peregrines* in this, that they are not so swift.

Aldrovandus thinks, that the Falcon which *Carcanus* calls the *Dutch* or *German Falcon* is the same with this: The which he thus describes. The *Dutch Falcons* are almost all

all great-bodied. The greater part of them of an oblong figure, and some moderately round: Very like to the *Peregrine* for Shape, Head, Beak, and Feet. The Thighs on the inside covered with white feathers. The Wings great: The Train long. Almost all the feathers are of a brown colour. For the greatest part of their bodies they are like a brown *Peregrine*, excepting the Head and Shoulder-blades, which in the *Dutch* are a little blacker. A white Coronet encompasses their Head near the Neck. The spots of the breast in most are brown and great, in some ferrugineous and oblong. But in such as are mewed, that is, have cast their first feathers, the Head, Neck and Shoulders are brown; the Back of an Azure-colour, distinguished with transverse brown marks: The Throat white, spotted with great lines. The Breast darker than in the *Peregrine*: But the Feet like that of the *Peregrine*. The Males or Tarrels of these *Dutch Falcons* can by no means be distinguished from the Males of the *Peregrines*, they are in all things so like the one to the other. Besides, they do so resemble the *Peregrines*, not only in the external shape of their bodies, but also in their nature and conditions; that none but a very quick-sighted, cunning, and well practised Falconer is able to distinguish them.

The German Falcon differs little or nothing from the *Peregrine*.

§. VI.

* The Haggard Falcon; Falco gibbosus.

IT is so called because by reason of the shortness of the Neck, the Head scarce appears above the points of the shoulders, or Wings withdrawn and clapped to the sides of the Back; so that it seems to have a bunch on its back. The *Germans* call it *Ein Hagerfalk*, or rather *Hogerfalek*, whence the *Latine* name *Gibbosus*: For the *Germans* call a bunch *Hoger*. Our *English Writers of Falconry*, as far as I understand them, call the *Peregrine Falcon* the *Haggard Falcon*, using those names promiscuously: Wherefore we shall not enlarge further concerning this Hawk; especially seeing what *Aldrovandus* hath of it, is all taken out of *Albertus Magnus*; on whose credit we do not much rely.

§. VII.

* The white Falcon. Falco Albus.

OMitting again what *Aldrovandus* hath borrowed out of *Albertus* concerning the *White Falcon*: we will only transcribe out of him, the description of the *Falcon* sent him by his Nephew *Julianus Griffonius*, which he received from *Angelus Galus of Urbin*, a Knight of *Malta*.

Its whole body was milk-white, only spotted with yellow spots, the which themselves also appeared white, unless one heedfully and intently beheld it. The Wings were like those of other the most beautiful Hawks, but purely white, and without spots. The Tail had twelve feathers alike white, and spotted with yellow; the sight whereof the uppermost feather (which was wholly white, and covered the rest, hiding them as it were in a sheath) took away. The Beak also was rather white than blue. The Feet, after the manner of other Hawks, yellow. The Eyes yellow and black: And that yellow nothing deeper than in a Hawk not yet mewed, which we commonly call a *Sore*; although I cannot believe that this was a *Sore*. For it might so come to pass, that it might retain that yellowness from a certain temper of body peculiar to this kind: Otherwise it would, after it was mewed, necessarily incline to whiteness. It was of a tall stature, a great and stately bird: It eat not but with its Eyes usually shut, and that with great greediness. It killed *Pullets*.

§. VIII.

* The Stone-Falcon, and Tree-Falcon. Falco Lapidarius & Arborarius.

OF the figure of the *Stone-Falcon* these few things occur in *Albertus Magnus*. It was of a middle quantity and strength between the *Peregrine* and *Gibbose* or *Haggard Falcon*.

A full description of the *Tree-Falcon* we have in *Gesner*, which (as Mr. *Willughby* thinks) agrees well to the *Hobby*. The *Tree-Falcon* (saith he) is a gallant and generous

rous bird, not unlike to a *Sparrow-Hawk*. From the Bill to the end of the Tail it was four Palms, or sixteen Inches long. The Feet were of a pale colour, mixt as it were of yellowish and green. The Back black: But the tips of the feathers of the Head and Back (especially the lower part of it) were compassed with reddish Semicircles. The feathers of the Wings were blacker: And the inside of the Wings [that which is toward the body] spotted with great pale-red spots. The Breast varied with whitish and brown spots. Certain yellowish white feathers made up spots behind the Ears, and in the Neck. The Eyes were black; the colour of the Bill blue. The Tail-feathers, all but the two middlemost, marked with spots.

Its Length.
The Feet.
The Colour.

The Eyes and Bill.

§. IX.

* The Tunis or Barbary Falcon.

THIS *Bellonius* describes thus: This *Barbary Falcon* is large, approaching to the shape and likeness of a *Lanner*. For it hath like feathers, and not unlike Feet; but it is lesser-bodied. Besides it flies more, and keeps longer on the Wing. It hath a thick and round Head. It is good for Brook-hawking, and stoutly soars on high in the Air: But for the Field it is not so fit as the *Lanner*.

The *Falcon* which our Falconers call the *Barbary* is lesser than the rest of this kind, viz. The *Peregrine*, *Mountain* and *Gentile*: If those do specifically differ, which we do not think.

§. X.

* The Red Falcon.

IT is called red, not because it is all over red, but because those spots (which in the rest are white) in this kind are red and black, but not so disposed as in others, neither in the Back, nor in the outward part of the Wing. But it doth not appear to be red, but only when it stretches out its Wings: For then the dark red shews itself in them. It is said to be lesser than a *Peregrine Falcon*. But this, and whatever else *Albertus* and others have delivered concerning the *red Falcon*, are of that nature, that they leave us altogether uncertain, whether there be any such *Falcon* or no, specifically distinct from the rest of this kind.

§. XI.

* The red Indian Falcons of Aldrovandus.

THE first of these (which we suppose to be the Female) hath a greater head than the latter, a broad and almost flat Crown, without any rising in the hinder part of the head, as is seen in some. The head is of an ash-colour tending to brown, as is also the Neck, the whole Back, and the outside of the Wings. The Beak very thick; next the Head both above and below all yellow; having a moderate ash-coloured hook; of which colour is also all that fore-part which is bare, beyond the Seal or investing Membrane. The Pupil of the Eye is of a deep black; the Iris brown, or of a dark Chestnut-colour. The edges of the Eye-lids round about yellow. From the exterior and lesser corner of the Eyes on both sides is drawn a long stroke of the same colour with the Breast. The whole Breast, and also the upper part of the inside of the Wings, the Belly moreover and the Rump; the Hips and Thighs are all fulvous or red, of a pale Vermilion colour. But the Chin in this red colour is marked with a long cinereous spot, produced downwards. The Breast also before is besprinkled with small scattering specks of the same colour. The sides, that are covered with the middle part of the Wings closed, are tinged with the same dark cinereous colour. The Wings are very long; their tips reaching much further than the middle of the Tail; crossing one another about the lower end of the Back. The Train is long, each feather whereof is varied with alternate spaces of black (which are the narrower, of a Semicircular figure) and of ash-colour, which are the broader. The Legs and Feet are yellow, pretty thick and strong: The Talons black and very sharp.

Its Head,

Beak,

Eyes.

Breast.

Chin.

Wings;

Train.

The Feet, and Talons,

The other red Falcon described. Its Colour.

The other (which we believe to be the Male) is less by near a third part; for variety of colours almost the same with the former; and those in the same parts, save that (as we hinted also before) the red colour in this is deeper and more evident: Likewise the same coloured Membrane as in the former [I suppose he means that about the Eyes.] Those parts also which in the former are coloured with a dark cinereous, in this are altogether black; viz. the upper side of the Wings, the Head, Back, and Tail. Yet may we take notice of some marks peculiar to this, wherein it differs from the other. For the Bill in this is wholly blue, excepting a small yellow membrane covering the Nostrils, having uneven borders, as it were serrate. The Chin or beginning of the Throat in this is of a little paler red, something inclining to cinereous, but not marked with any spot as in the former. The interior flag-feathers of the Wings are white, only crossed at due intervals with many transverse brown marks: The rest of the upper side of the Wings is of a very deep fulvous colour, like red Oker. The upper side of the Tail is also adorned with a double variety of transverse spots, to wit, white and ash-coloured inclining to blue, alternately disposed. The Feet and Legs are of a more dilute, yellow, or Wax colour.

Both came out of the East-Indies.

What is delivered by Albertus and others concerning the blue-footed Falcon and bastard Falcon I omit, as being only general and uncertain; referring the curious, and those that desire to know such things, to the Authors themselves, or to Aldrovandus, for satisfaction.

We have a sort of bastard Hawk common enough among us, called the *Boccart*, and its *Tarcel* the *Boccart*.

§. XII.

The Crested Indian Falcon.

Its biggest, Head, Neck, Breast, Beak, Legs and Feet, Wings, Train.

THIS Bird brought out of the East-Indies we saw in the Royal Aviary in St. James Park near Westminster, and thus described it. For bigness it was not much inferior to a *Goshawk*: The Head flat, black, topped, the Crest hanging down backward from the hind part of the head, like a *Lappings*, but forked. The Neck red. The Breast and Belly were parti-coloured of black and white, the alternate cross lines being very bright and fair. The *Irides* of the Eyes yellow. The Beak of a deep or dark blue, almost black, especially towards the point; for the Beak was covered with a yellow Membrane. The Legs feathered down to the Feet: The Feet yellow; the Talons of a dark black. The lesser rows of Wing-feathers had whitish edges. The Train was varied with transverse spaces or beds of black and cinereous alternately. The rest of the feathers were black.

§. XIII.

* The *Lanner*, whose *Tarcel* is called the *Lanneret*.

Bellonius his description of it.

The description of the French Lanner. The colour of the Beak, and Feet, Breast, Back, Wings, Train.

THE *Lanner* is less than the *Gentile Falcon*, adorned with fair feathers, and in that respect more beautiful than the *Sacre*. The most sure and undoubted notes whereby one may distinguish a *Lanner* from other Hawks are these; That it have blue Beak, Legs, and Feet: The anterior or Breast-feathers parti-coloured of black and white; the black marks [or lines] not crossing the feathers, but drawn long-ways down the middle of them, contrary to what they are in *Falcons*. The feathers of the back are not much variegated, as neither those of the Wings or Tail, in the upper or external part. And if perchance there be any spots seen in these, they are small, round, and whitish. But to one that shall view the lower or under side of the Wings extended there will appear marks of a different figure from those of other Rapacious Birds: For they are round, and like little pieces of money, dispersed through the *Superficies*: Although, as we said, the feathers of the Breast, and forepart of the body are varied with spots drawn downwards in length, and situate on their edges. It hath a thick and short Neck, and a like Bill. The Male or *Lanneret* is of a lesser body, but almost the same colour of the feathers. Both Male and Female have shorter Legs than the rest of the *Falcons*.

Carcannus

Carcannus his description differs in some things from this of *Bellonius*, which we shall therefore subjoin. The Head of all *Lanners* is wholly yellow, with a flat Crown. The Eyes black and great: The Nostrils for the most part small: The Beak short and thick, lesser than that of a *Peregrine Falcon*, and also than that of a *Mountain*; of a blue colour; The Breast yellow, spotted with a few thin-set ferrugineous spots: The Back like a *Peregrine Falcon*: The ends of the Wings spotted as it were with round white Eyes. The Wings and Train long: The Legs short. The Feet much lesser than a *Peregrine*, and blue of colour. In those that are mewed the whole head is tintured with yellow as far as the shoulders, but inclining to red, and varied with certain slender lines. The Back is blue, crossed with black lines and some golden: The Breast of a deep yellow and without any spots. But the feathers of the Thighs are varied with a few cross lines. The feet in these, which were blue, are changed into yellow. The *Sores* of this kind are very hardly distinguished from those that are mewed.

It seems to be called *Lanarius* to *laniando*, i.e. from tearing. It is of a gentle nature, of a docile and tractable disposition (as *Bellonius* writes) very fit for all sorts of Game, as well Waterfowl, as Land: For it catches not only *Pies*, *Quails*, *Partridge*, *Crows*, *Pheasants*, &c. but also *Ducks*, yea, and *Cranes* too, being trained up thereto by humane industry. All this is to be understood of the French *Lanner*, for the Italian described by *Carcannus* is of no worth or use. *Carcannus* writes, that he could never lo train them up, as to make them good for ought.

The *Lanner* abides all the year in France, being seen there as well in Winter as in its place. Summer, contrary to the manner of other Rapacious Birds.

§. XIV.

The Hobby, Subbuteo, Aldrov.

THE Bird we described was a Female, and weighed nine ounces. The length from the tip of the Bill to the end of the Tail was thirteen Inches. The breadth or distance between the tips of the Wings extended two feet and eight Inches. From the tip of the Beak to the Nostrils was something more than half an Inch. The Beak like that of a *Kestrel*: The upper Mandible prominent, hooked, semicircular; the Bale covered with a yellow skin or *Sear*, the part next the skin white; the rest of a dark blue. It hath also a tooth or Angle on each side at the beginning of the hooked part, which is received in a hollow dent or nick in the lower Chap. The Tongue broad and a little cleft or divided. The Palate whitishide black, and having a Cavity impressed to receive the Tongue. The Nostrils round: The *Irides* of the Eyes of a Hazel colour: The Eye-lids yellow.

As for the colour of the Plumage; above each Eye passed a line of a clay-colour, [ex *ruffo albicans*.] The feathers on the top of the head had their shafts or middle part black, their borders of a deep Chestnut: Those on the middle of the Neck again were of a clay-colour, the back and Wings of a dark brown, or cinereous black; those on the Rump and the lesser Pinion feathers being lighter, the greater Pinion feathers, and those on the middle of the back darker. The Chin and upper part of the Throat were white, with a dash of yellow. * To this white were drawn from the head on each side two lines; one from the aperture of the mouth, the other from the hinder part or noddle.

The lower part of the Belly was reddish, the rest of the Belly and Breast clothed with feathers, spotted with black in the middle, and having their edges white. The Thighs red, spotted with black, but the spots less than those on the Breast. The number of prime feathers in each Wing twenty four, whereof the second the longest. The extreme or outmost had their tips black; all of them their interior webs varied with transverse clay-coloured spots. The covert-feathers of the under side of the Wings were black, curiously painted with round spots of white diluted with red.

The Tail, as in all of this kind, consisted of twelve feathers, the middlemost whereof were the longest, and the rest in order shorter to the two outermost, which were the shortest. The length of the middlemost was about five inches and an half, these were on both sides their shafts of one and the same colour; the rest had their interior Vanes marked with transverse reddish spots; the utmost tips being whitish.

M 2

The

The Feet and Talons. The Legs and Feet were yellow: The middle and outmost Toes connected as in others of this kind to the first joint: The Talons as black as jet.

The Entrails. It had a great Gall: The length of the Guts was two foot lacking an inch: The Appendices or blind Guts short; besides which it had another single Appendix or process, which was (we suppose) the remainder of the *Duodenum intestinale* thrunk up.

Its principal Game. The Hobby is a bird of passage, yet breeds with us in England. Its Game is chiefly Larks, for the catching of which Birds our Fowlers make use of it thus. The Spaniels range the field, to find the birds; the Hobby they let off, and accustom to soar aloft in the Air over them. The Larks espousing their capital enemy, dare by no means make use of their Wings, but lie as close and flat upon the ground as they can; and so are easily taken in the Nets they draw over them. This kind of sport is called, *Daring of Larks*.

To catch Hobbies. To catch these Hawks, the Fowlers take a Lark, and having blinded her, and fastened Lime-twigs to her Legs, let her fly where they see the Hobby is, which striking at the Lark is entangled with the Lime-twigs.

An account of the names. The Bird is called in Greek *Προτοπέλαγος*, that is, the lesser *Τετοπέλαγος* or Buteo; which Pliny renders in Latine, *Subbutco*. It is called in English, *Hobby*, after the French name.

§. XV.

The Kestrel, Stannel, or Stonegall, in Latine Tinnunculus or Cenchris.

Its bigness, Weight, Length, Breadth, Beak, Nostrils, Tongue, Eyes, Mouth, Head. The Female is about the bigness of a Pigeon. That we described weighed nine ounces. Its length from the point of the Beak to the end of the Train was fourteen inches and a quarter: Its breadth, or the distance between the tips of the Wings extended two foot and an half. The Beak short, prominent, hooked, and sharp-pointed: The Base of the upper Chap covered with a skin or membrane, in which are the Nostrils. The middle part of the Beak next the *Sear* is white, the rest of a dark blue: Where it begins to bend it hath a Tooth or Angle, which is received in a dent or cavity in the lower Chap. The Nostrils round: The Tongue cleft: The Eye-lids yellow; the Eyes defended by prominent brows. It hath a wide mouth, and the Palate blue.

Colour of the back. The Head is great; the Crown broad and flat, inclining to an ash-colour, and marked with narrow black lines along the shaft of each feather. The back, shoulders, and covert-feathers of the upper side of the Wings ferrugineous, marked with black spots, viz. each feather being reddish hath a black spot toward the tip. The Rump is cinereous, having the like transverse black spots. The lower or nether side of the body, that is the Breast and Belly, was of a paler red or ferrugineous, varied with black lines drawn downwards along the shafts of the feathers. The Chin and lower belly without spots.

Prime Wing-feathers. The flag-feathers of the Wing are in number twenty four: The exterior of which are of a brown or dusky colour, but their interior Vanes are partly of a reddish white, indented with the brown like the teeth of a Saw. The six or seven next to the body are red, having their interior Vanes marked with transverse brown strokes. The inner or under side of the Wing is white, with black spots.

Its Train. The Train made up of twelve feathers was above seven inches long. The outmost feathers shortest, the rest in order gradually longer to the middlemost. The utmost tips of the feathers were of a rusty white. Then succeeds a black bar or ring of an inch broad; the rest of the feather being of a rusty ash-colour, marked with transverse black spots.

The Legs and Talons. The Legs and Feet are of a lovely yellow, and the Talons black.

The Inwards. It had a Gall. In the stomach we found *Beetles* and fur of *Mice*. The length of the Guts was twenty eight Inches. The single blind gut [*Appendix intestinalis*] was twice as long as the lower Appendices or blind Guts. The Male or Tarcel differs from the Female chiefly in being less, and having the head and back of an ash-colour.

How the Male differs from the Female. Their Game. *Kestrels* are wont commonly with us in England to be reclaimed and trained up for fowling, after the manner of other Rapacious birds. They catch not only small birds, but also young *Partridge*.

They

They build in hollow Oaks and other trees; and that not after the manner of *Nest* and *Ge-nestation*. *Crows*, upon the boughs, but after the manner of *Jackdaws*, always in holes, as *Turner* saith he himself observed. *Aristotle* makes the *Kestrel* the most fruitful or best breeder among Birds of prey; yet neither doth he (saith he) lay more Eggs than four at once. Her Eggs are whitish, all over stained very thick with red spots, whence *Aristotle* and *Pliny* write, that they are red like Vermilion: Indeed, they deserve rather to be called red than white.

It is called *Κεχρὸς* from *Κεχρὸς*, signifying *Millet*, as if one should say the *Millet-bird*, for the same reason as *Geyner* thinks, that a kind of Tetter [the Swine-pox] is called *Herpes miliaris*, because it is marked or motled with specks like *Millet* seed.

This Bird is by some called the *Wind-hover*, of which name we have elsewhere given an account.

§. XVI.

The Merlin, called in Latine Aelanus.

Ellonius hath recorded that the *Merlin* is the least of all those birds our Falconers use for hawking; and truly, if we except only the *Matagaffe* or great *Butcher-bird* (which is sometimes reclaimed for small birds) so it is. It is not much bigger than a *Black bird*. The length from the tip of the Bill to the end of the Tail in that we described was fourteen Inches, to the end of the Toes twelve and an half. The Beak was blue, and had an angular Appendix or tooth on each side: The *Brides* of the Eyes of a hazel colour: The back and upper part were particoloured of a dark blue and a ferrugineous: The shaft and middle part of the feathers of the Head and Wings were black, the edges blue: The flag-feathers of the Wings black with ferrugineous spots. The Train five inches long, of a dark brown or blackish, with transverse white bars: Of these black and white spaces were fourteen in all in the Female; in the Male or Tarcel but ten. The Breast and Belly were of a rusty white, with brown spots, not transverse, but tending downwards from the Head toward the Tail. The Legs were long, slender, and yellow: The Talons black. Below the Head it had a ring of yellowish white, encircling the Head like a Coronet. In the older Birds the back grows bluer as in other Falcons.

In the Males the feathers on the Rump next the Tail are bluer. By which note and their bigness Falconers discern the Sex. For the Female in this, as in other birds of prey, is greater than the Male, being for colour less red, with a certain mixture of blue. In the Train of the Male we described were only five cross pale-red bars (as we said before) the intermediate black spaces being broader. The Train was five Inches long, the whole bird thirteen.

The *Merlin*, though the least of Hawks, yet for spirit and mettle (as *Albertus* truly writes) gives place to none. It strikes *Partridge* on the Neck, with a fatal stroke, killing them in an instant. No Hawk kills her prey so soon. They fly also *Heath-pouts* with it.

CHAP. X.

Of short-winged Hawks.

§. I.

The Goshawk, Accipiter Palumbarius.

It is bigger than the common *Buzzard*: Of a dark brown or *Buzzard* colour on the head, neck, back, and upper side of the Wings. The whole Breast and Belly white with transverse black lines standing very thick. The Thighs are covered over with reddish feathers, having a black line in the middle down the shaft. The Legs and Feet are yellow; the Talons black. The Beak blue, and the *Sear* of a yellowish green.

The Wings, when closed, fall much short of the end of the Train, by which note alone and its bigness it is sufficiently distinguished from all other Hawks. The Train is long,

long, of a cinereous or dun colour, with four or five cross blackish bars, standing at a great distance each from other. In each feather of the Breast there is a black circular line near the top, running parallel to the edges of the feather, and in some also the shaft and middle part of the feather is black.

Its Game.

It takes not only *Partridge* and *Pheasant*, but also greater Fowl, as *Geese* and *Cranes*: Sometimes also it catches *Conies*. Our English Authors who have written of *Falconry* make this the same with the *French Antour* or *Astur*, although *Aldrovandus* would have the *Astur*, which he takes to be the *Asterias* of *Aristotle*, to be a different bird. But I suppose the *Goshawk* was not well known to *Aldrovandus*.

§. II.

The Sparrow-hawk, Accipiter Fringillarius seu Nifus Recentiorum.

Its bigness, length, and breadth.

It is almost as big as a *Pigeon*. Its length from Bill-point to Tail end about fourteen inches: The distance between the tips of the Wings extended twenty six inches.

Beak,

Its Beak is short, hooked, blue, black toward the tip: The Basis of the upper Chap covered with a yellowish green skin, (which they call the *Scar* or rather *Cere* from the Latine word *Cera*, signifying wax, because it is for the most part of a Wax-colour,) having an angular *Appendix* or tooth on each side under the Nostril. The Eyes of mean size, with yellow *Irides*, over-hung by brows, prominent like the Eaves of a house. The Crown of the head is of a dark brown: Above the Eyes, and in the hinder part of the head sometimes are white feathers. [The bottoms of the feathers in Head or Neck are white.] The rest of the upper side, Back, Shoulders, Wings, Neck, are of the same dark brown, excepting some feathers of the Wings which are spotted with white. [In another bird the Head and Wings were of a dark ash-colour or blue.] The colour of the under side, viz. the Neck, Breast, Belly, Sides, and Wings various, of white and blackish, or ruflet: Ruflet waved lines thick-set crossing the whole Breast and Belly, and indeed, each single feather; the white intermediate spaces are broader than the ruflet lines. The feathers under the Chin and by the Legs of the lower Mandible are white, only their middle parts about the shaft, especially toward the tip, brown or ruflet.

The Wings,

The Wings when closed scarce reach to the middle of the Tail. The flag-feathers are twenty four, in whole under sides appear, on the interior webs of each, dark transverse marks or spots.

Train,

The Tail is almost two Palms long, consisting of twelve feathers, having five or six cross black bars. The tips of the feathers are white. The Thighs are strong and fleshy, as in all birds of prey; the Legs long, slender, yellow; the Toes also long; the out-molt, as in other Hawks, being joined to the middlemost by a Membrane below. The Talons black. It lays about five white Eggs, spotted near the blunt end with a Circle, as it were a Coronet, of blood-red specks.

Its Food.

It feeds only upon Birds (as our Fowlers affirm) never touching Beetles or other Insects.

Its Mettle.

For its bigness it is a very bold and courageous Bird, and is frequently trained up and made for hawking.

The manner of catching Sparrow-hawks near coastlands.

Bellonius acquaints us with a common and familiar way of taking this kind of Hawks about the Streight of *Propontis*, in these words. Not far distant (saith he) from the outlet of the *Euxine* Sea, at the entrance of the Streight leading to the *Propontis*, having climbed up a very high Hill that is there, by chance we found a Fowler on the top intent upon the catching of *Sparrow-hawks*. Whereas it was now past mid-April, at which time all sorts of birds are wont to be very busy in breeding or building their Nests, it seemed to us wonderful strange and unusual, to see such a multitude of *Kites* and *Hawks* coming flying from the right side of the Sea. This Fowler did with such industry and dexterity lay wait for them, that not so much as one escaped him. He took at least twelve Hawks every hour. The manner thus: He himself lay hid behind a little bulhet, before which he had levelled a square plat or floor, about two paces long and broad, being two or three paces distant from the bulhet. In the borders of this floor he had pitch down [or thrust into the ground] six stakes, at due distances, of about the thickness of ones thumb [the word is *Pollicis*, and may possibly signifie an inch-thick] of a mans height, two on each side: On the top of each, on that side which

which respected the floor was a nick cut in, upon which was hung a Net made of fine green thread. In the middle of the floor stood a Stake a Cubit high, to the top of which a Cord was bound, which reached as far as the Fowler, who lay behind the bulhet. To this same Line, lying loose, were many little Birds fastned, which picked up grains of Corn on the floor. Now, when the Fowler saw a Hawk coming afar off from the Sea-coast, shaking the Line, he made these birds to flicker up and down. Which the *Sparrow-hawks* (as they are notably sharp-sighted) elpying at least half a League off, came flying full speed, and rush'd upon the Nets with that force, to strike at the birds, that being entangled therein they were taken. The Hawks being allured into the Nets, and caught by this Artifice, the Fowler thrust their whole wings up to the shoulders into certain linnen clothes, fown up for that purpose, which our *Falconers* call, *mayling* or *trussing* of *Hawks*. Thus mayld or trust up he left them upon the ground, so unable to help themselves, that they could not stir, nor struggle, much less disengage or deliver themselves. No man could easily imagine, whence such a multitude of *Sparrow-hawks* should come. For in two hours time that we were spectators of that sport, we saw more than thirty taken by this deceit, whence one may conjecture, that one Fowler in the space of one day might take more than an hundred. These Hawks do not usually stay so long in one place as *Falcons*, but are often changing place, whence it is more difficult to take them with a Net. For they will not readily give a Fowler time to spread a Net over them; unless they be deceived in that manner *Bellonius* hath set down.

CHAP. XI.

Of Butcher-Birds or Shrikes called in Latine Lanii or Colluriones.

The new name of *Lanius* or *Butcher* was by *Geſner* imposed on this bird, because he thought it agreed to no description of the Ancients; and because it is wont to prey on other Birds. *Bellonius* would have it to be the *Collurio* of *Aristotle*. Of the *European* Rapacious birds it is the least; having a straight Bill, only a little hooked at the point; a Tail like that of a *Mag-pie*, viz. with the outmost feathers shortest, the rest in order longer to the middlemost; whence the French do, not without reason, call it the *Grey Pie*. *Turner* suspects it to be the *Tyrannus* of *Aristotle*. In English it is called a *Shrike*.

§. I.

The greater Butcher-bird or Mattageſi. Lanius cinereus major.

This Bird in the North of England is called *Wierangle*, a name, it seems, common to us with the *Germans*, who (as *Geſner* witnesseth) about *Strasbourg*, *Frankfort*, and elsewhere call it *Werkengel*, or *Warkangel*, perchance (saith he) as it were *Wurangel*, which literally rendred signifies a *suffocating Angel*. In other parts of Germany it is called *Neghen-doer*, that is, *Nine-killer*, [*Enneadonos*] because it kills nine birds before it ceases, or every day nine. Our *Falconers* call it the *Mattageſi*, a name borrowed from the *Savoyards*, which is by *Aldrovandus* interpreted a *murdering Pie*.

It is for bigness equal to the common *Black-bird*, or the *Song-Thrush*. It weighs three ounces. Its length from the tip of the Bill to the end of the Tail is more than ten inches: Its Breadth fourteen inches. Its Bill from the tip to the Angles of the mouth is above an inch long, black, hooked at the end, and furnished with an Angle or Tooth on each side, like that of the *Kestrel*, *Sparrow-hawk*, and lesser birds of this kind. [*Aldrovandus* affirmeth, that his greater *Italian Lanius*, which they commonly call *Regesola*, wants these angular *Appendices* of the Bill, wherein it differs from ours.] The Tongue is slit or forked at the end, and rough, [In that described by *Aldrovandus*, the tip of the Tongue is multifidous or jagged, ending in many sharp Fibres, as it were hairs, which perchance (saith he) is so framed by Nature for the striking of Insects.] In the Palate is a fissure or cleft, and about the cleft a hollow Cavity equal to the Tongue. The Nostrils are round, above which grow stiff black hairs or bristles. From the corner of the Mouth on each side through the Eyes to the

The colour. the hind part of the head is drawn a black stroak. The Head, Back, and Rump are ash-coloured: The Chin and Belly white: The Breast and lower part of the Throat varied with dark transverse lines.

The flag-feathers of the Wings. It hath in each Wing eighteen prime feathers; the tips of all which, excepting the four outmost, are white: The second and third have also their exterior edges white. Moreover, the first or outmost feather begins to be white at the bottom: In the rest in order as far as to the tenth the white part increaseth, so that more than the lower half of the tenth feather is white. From the tenth in the following feathers the white diminishes again, yet in their interior edges it runs up to the top: in the last, that is, thofe next to the body, it fails quite: Else both the Beam-feathers and the first row of covert-feathers are black.

The Tail. The Tail is made up of twelve feathers, of which the middlemost are the longest, by measure four inches and a quarter; the rest in order shorter to the outmost, which are but three inches and an half. The outmost feathers are all over white, the two middlemost have only their tips white, the rest of the feather being black; in the intermediate feathers the black part gradually diminisheth to the outmost: Whence (saith *Aldrovandus*) when it flies the white part of the Tail shews like a Crescent. [In the greater *Lanius* of *Aldrovandus* the four middle-feathers of the Tail are wholly black, and not two only.]

The Legs and Feet are black: The outmost Toe at the bottom joyned to the middlemost.

The Testicles are round and little, That we dissected had in the stomach Caterpillars, Beetles, and Grasshoppers.

Its Food. In Germany between Heidelberg and Strasburgh, about a Village called *Linkenow*, we killed this bird: It is also common elsewhere in Germany. Moreover, we are told, that it is found in the mountainous parts of the North of England, as for instance in the Peak of Derbyshire, where, (as we said) it is called *Wierangel*.

Its Place. Gesner reports, that the *Lanius* of Switzerland do for the most part haunt and abide among thorny shrubs, sitting upon the highest twigs of dwarf-trees and bushes, setting up their tails as they sit. In them also they build, making their Nests of Moss, Wool, and certain downy herbs: But the bottoms thereof of Heath, upon which they lay within side the soft and tender stalks of hay, *Daggs-tooth*, and other like herbs. In this Nest in summer time are to be found six Young, so unlike to the old ones, that they scarce resemble them in one mark, their Bills, Legs, and Feet only excepted; yea, rather on the contrary the bottoms of all their downy feathers, (which are as yet nothing else but certain rudiments of their future Plumage) incline somewhat to green.

Although it doth most commonly feed upon Insects, yet doth it often set upon and kill not only small birds, as *Finches*, *Wrens*, &c. but (which *Turner* affirms himself to have seen) even *Thrushes* themselves: Whence it is wont by our Falconers to be reclaimed and made for to fly small birds, as we have before noted.

The greatest Butcher-bird of Gesner. Gesner, besides this we have described, sets forth another sort of great Butcher-bird, like to this, but twice as big, so that it is double the magnitude of a Black-bird. It is of the same nature, shape of body, and colour, except that the Wings are red.

§. II.

The lesser Butcher-Bird, called in York-shire, *Flusker*, *Lanius tertius Aldrov.*

Its measures. It is of the bigness of a *Lark*, and hath a great head. The Cock weighed two ounces and an half: From the tip of the Bill to the end of the Tail it was seven inches and an half long, to the end of the Claws but six inches and an half: from tip to tip of the Wings spread twelve inches and an half broad.

The Bill was an inch long, black, and strong. The tip of the upper Chap hooked; near the hooked part furnished with two angular Appendices, over-hanging the lower Chap when the mouth is shut, it having no dents or cavities to receive these Appendices: Wherein the Bill of this bird differs from that of a *Hobby* or *Kestrel*. The Mouth within yellow: The cleft of the Palate rough. The Tongue divided into many Filaments: The Nostrils round: About the Nostrils and corners of the mouth grew stiff, black hairs or bristles. The middle of the Back, and lesser rows of feathers covering the upper side of the Wing reddish or ferrugineous [rusty] the Head and Rump cinereous. From the corners of the Mouth through the Eyes a black stroak

stroke is produced beyond the Ears: This black line is terminated and divided from the ash-colour by another whitish one. The lower belly is white: The Throat and Breast white, dashed with red.

There are in each Wing eighteen beam-feathers; the first or outmost very short and little, the third longest of all. The Wings shut much shorter than the Tail. The greater Wing-feathers dusky, the exterior Vanes of those next the body being red, the edges of the middlemost white. The Tail is three inches long, composed of twelve feathers, of which the outmost are the shortest, the rest on each side in order longer to the middlemost, which are the longest; and almost wholly black; of the next to these the bottoms or lower parts are white, especially the interior Web; of the four next on each side the lower half is white, as also the tips; of the outmost the exterior webs are wholly white.

The Feet are black, or of a dark blue colour. The outmost Toe joyned at bottom to the middlemost.

The Testicles white and round; the Gall large; the Guts eleven inches long; the blind Guts short and little: in the stomach dissected we found Flies and Beetles.

The Bird here described had built her Nest in a Holly-bush, of grass, bents, and feathers; in which were six oblong, pretty great Eggs, toward the sharper end almost wholly white, toward the blunter encompassed with a circle of brown or dark red, as it were a Coronet.

At Florence I described a *Lanius*, which the Fowlers there called *Vellia*, very like to this; only the bottoms or lower part of the eight outmost beam-feathers of the Wings were white, and that so far that some part of the white appeared above the covert feathers. Of which note I wonder that neither *Aldrovandus* nor Mr. *Willughby* have made any mention in their descriptions of this bird.

§. III.

A Hen Butcher-bird like to the second *Lanius* of *Aldrovandus*.

It is somewhat less than the precedent in all dimensions. It differs from the second of *Aldrovandus* in that its Bill is not red but black; nor the feet cinereous, but like those of the Cock; and also that it wants the white spot on the Wing. The Head is of an ash-colour inclining to red, as in *Thrushes*. The Back reddish, varied with semicircular black lines near the tip of each feather. The feathers next incumbent on the Tail are long, of a deeper red, and adorned with semicircular lines. The Throat and Breast elegantly variegated with the like black semicircles, almost after the manner of the *Wryneck*. The Belly is white. The prime feathers of the Wings dusky; but those next the body, and the lesser rows of covert-feathers of the Wings have red edges. The Tail black, with a tincture of red. The outmost feathers have all their exterior webs white; the four next on each side have their tips white; the two middlemost are of a dark red. The lower Chap of the Bill from the middle almost half way is white.

§. IV.

Another sort of Butcher-Bird, perhaps the *Lanius minor primus*, *Aldrov.*

This had a white spot on each shoulder: The bottoms of the nine outmost beam-feathers were white: Above the Bill was a cross black line: The Head of a palered or russet: The Back first red, then ash-coloured: Under the Throat were transverse dusky lines, else the whole underside was of a dirty white. I also [J. R.] at Florence in Italy saw and described a *Lanius* like to this, differing only in that the Head and Neck were of a deeper red. Mr. *Willughby* also described another killed near the River *Rhene* in Germany, whose Head was of a lovely red: A line or white space of the figure of a *Parabola* encompassed the Tail, the interior space or Area therein contained being black. The eleven exterior Quills were white from the bottom almost to the middle. The Feet and Claws black.

In all the birds of this kind that I have seen and described the bottom of the nine outmost beam-feathers of the Wings were white.

The birds of this kind differ very much in colour, so that I am in some doubt, whether the above described differ in Species, or in Age and Sex only. I suspect they differ specifically.

The Species
of lesser
Butcher-birds.

The lesser *Butcher-birds* therefore may be divided into those that have a black line in both cheeks passing through the Eye, and those that want it. Those which have this line may be subdivided into those which have a white mark upon the shoulders and those that have it not. The first sort may be called, the *Lesser Butcher-bird variegated with black and white femicircular lines*: The second, *The lesser red Butcher-bird*: The third, *the lesser ash-coloured Butcher-bird*.

CHAP. XII.

Of the Bird of Paradise, or Manucodiata, in general.

THat Birds of Paradise want feet is not only a popular persuasion, but a thing not long since believed by learned men and great Naturalists, and among the rest by *Aldrovandus* himself, deceived by the birds dried or their cases, brought over into *Europe* out of the *East Indies*, dismembered, and bereaved of their Feet. Yea, *Aldrovandus* and others do not stick to charge *Antonius Pigafeta*, (who gave the first notice of this Bird to the *Europeans*): with falsehood and lying, because he delivered the contrary. This error once admitted, the other fictions of idle brains which seemed thence to follow, did without difficulty obtain belief; viz. that they lived upon the celestial dew; that they flew perpetually without any intermission, and took no rest but on high in the Air, their Wings being spread; that they were never taken alive, but only when they fell down dead upon the ground: That there is in the back of the Male a certain cavity, in which the Female, whose belly is also hollow, lays her Eggs, and so by the help of both cavities they are sitten upon and hatched. All which things are now sufficiently refuted, and proved to be false and fabulous, both by eye-witnesses, and by the birds themselves brought over entire. I my self (saith * *Joannes de Laet*) have two Birds of Paradise of different kinds, and have seen many others, all which had feet, and those truly for the bulk of their bodies sufficiently great, and very strong Legs. The same is confirmed by * *Marggravin*, in his *Exotics*, *Wormius* in his *Museum*, page 295. and especially *Bontius* in the fifth Book and twelfth Chapter of his *natural* and *medic* History of the *East-Indies*, where we have to this purpose; *It is so far from being true that these birds of Paradise are norified by the Air, or want Feet, that with their crooked and very sharp Claws they catch small birds, as Green Linnetts, Chaffinches, and the like, and presently tear and devour them like other birds of prey: No less untrue is it, that they are not found but only dead, whereas they sit upon trees, and are shot with Arrows by the Tarmacenes; whence also, and from their swift * reciprocal flying, they are by the Indians called Tarmacensian Swallows.* We truly, before we had read these things in *Bontius*, had subjoined these birds to the *Rapacious* kind, because they did seem to us in their Bill and crooked Claws very nearly to resemble them, and consequently in all likelihood to prey upon little birds. Hence also it appears how rashly some have believed, that they took their rest hanging by those two * *cirri*, which run out, as it were two long strings, beyond the rest of the feathers, twined about the boughs of trees: For those *Cirri* are nothing else but the naked shafts of feathers, having neither the structure nor use of Muscles. It were to be wished, that those who travel to those parts of the *East Indies*, where these Birds are found, would diligently enquire of the Inhabitants, where and how they build: And what those long feathers serve for, which springing in great numbers from both sides of the breast do both run out in length beyond the Tail, and also are spread out far in breadth; and especially what may be the use of these two long naked shafts of feathers before mentioned, which (to say the truth) is to us as yet unknown.

The most beautiful birds (as *Aldrovandus* reports) are called by the inhabitants of the Molucca Islands *Manucodiate*, that is, *Goats birds*, and had in great esteem and veneration. They are called *Birds of Paradise*, both for the excellent shape and beauty of their bodies, and also because where they are bred, whence they come, and whither they betake themselves is altogether unknown, sith they are found only dead upon the earth, so that the Vulgar imagine them to drop out of Heaven or Paradise. But this mistake we have before out of *Bontius* rectified.

CHAPTER.

С H A P. XIII.

Of the several sorts of Birds of Paradise.

ϕ. I.

* Aldrovandus his first Bird of Paradise.

For bigness and shape of body, behold singly, it comes near to a *Swallow*. The feathers invetting it are of several colours; very beautiful and lovely to behold. The Head like that of a *Swallow*, and great for the smallness of the body; the feathers covering its upper part from the first Vertebre of the Neck to the beginning of the Bill were short, thick, hard, close-set, of a bright, glistening, yellow colour, shining like burnished Gold, or the Sun-beams: The rest which covered the Chin were of an admirable bluish green, such as we see in the heads of *Mallards*, when exposed to the Sunshine. The Bill was longer than that of a *Swallow*: The Wing-feathers for shape like those of *Heron*s, only slenderer and longer, of a shining dusky colour between black and red: which together with the Tail being spread round represent the likeness of a Wheel: For they are absolutely immovable, sticking in the skin like so many darts. Besides which there are also other small feathers, and those verily not a few, which spring up just by the originals of the greater feathers that make up the Wings, and cover the lower parts of them. These are half red or Scarlet-coloured, half of a shining, Saffron, or Gold colour; and by reason of that remarkable and singular disparity of colours contribute much to the beauty and elegance of this bird. All the rest of the body was covered with fulvous feathers inclining to red [*rufinus*], yet so, that still one might observe some difference between them. For those on the Breast and Belly, which stood thicker, and were likewise broader (being of two or three inches breadth) were of a fulvous or rather liver colour, and that very bright and resplendent. Those on the Back stood thinner, and were fewer, gaping moreover with large divisions, after the manner exactly of those growing on the backs of *Heron*s. [I suppose he means the several threads or filaments which compose the web of the feather stood thinner or at greater distances, as in those of a *Peacocks* Tail.] Neither do they attain that eminent breadth, or match them in that excellent liver-colour; but are rather of a purple, resembling flesh or somewhat more obscure. Those two filaments which spring out of the back are in a manner black.

§. II.

* Aldrovandus his second Bird of Paradise.

This differed from the rest, especially in that it had in its Rump two very long feathers, exceeding the rest about two palms length: The Head was almost white, besprinkled with yellow and golden spots: The eyes likewise yellow, the hairs of the Eye-lids red: The Bill of a middle colour between yellow and green, two inches long; the upper part a little crooked: The Tongue red, long, sharp, not unlike that of *Woodpeckers*, very fit to strike Insects. The Breast was somewhat red: The Belly, Back and Wings were white: Yet were their upper sides all over, and their ends ferrugineous. The Back at first seemed to incline somewhat to yellow, but about the Rump it changed to a red or ferrugineous. In the length of the Wings, which equalled five Palms, it exceeded the first species. The Tail feathers at their insertion into the back were white, eel ferrugineous, longer than in the first Species.

This Bird wanted those two threads, which (as I said before) grow out of the backs of all this kind. Wherefore it is to be thought that either by reason of the length of the journey, or continuance of time, they fell away and were lost; not that it is therefore to be called a Female, as the Vulgar have been hitherto falsely persuaded. The use of the two forementioned long feathers may perchance be for swifter flight.

Colour of the Head,
Bill,
Tongue,
Breast,
Wings,
Back.
The Tail.

Na

6. III.

§. III.

* Aldrovandus his third Bird of Paradise.

* The great Bird of Paradise.

THIS for the length of its body we thought good to call * *Hippomancodicta*: As being from the point of the Bill to the end of the Tail and Wings twenty seven inches long, and two Palms broad when the Wings are closed. The Bill was well hooked, especially the upper part; three inches long; the lower part a little shorter. The whole bird was white, except the Neck and Belly, which were of a Chestnut-colour. The upper part of the Head was ferrugineous; to which succeeded a yellow, and to the yellow a green colour. Near the Back the feathers were very prominent, viz. the length of two or three inches. This Bird had only one string, and that rough and very flexible: Wherefore we think that the other was by some accident lost.

§. IV.

* Aldrovandus his fourth or crested Bird of Paradise.

FROM the beginning of the Bill to the end of the Wings it was by measure full eighteen inches. The Bill for the smallness of the body was very long, black, and somewhat hooked. The feathers of the Head, Neck, and Wings were black, yet at the joining of the Bill yellow. It had a crest or cop near the Neck almost three Inches high, rigid, of a yellow colour, and which seemed to consist rather of bristles than feathers: And in that chiefly did it differ from the following bird.

§. V.

* Aldrovandus his fifth or common Bird of Paradise.

* Footle.

THIS *Gesper* also hath figured, but not described, only he saith, it is very like that which was formerly graven, and published by it self, at *Nuremberg* in *Germany*: To the *Icon* whereof he saith these words were added. The Bird of Paradise or Indian * *Apor* is of the bigness of a *Song-Thrush*, wonderful light, and very long-winged, the feathers being rare, tender, and pervious to the light; having besides two long, slender, black, horny feathers, if they may be called feathers and not rather bristles, for they are bare of filaments. It hath no feet; flies perpetually, nor doth it ever rest but hanging in some tree, by those long strings or bristles twined about a bough. No Ship sails so swiftly, nor so far from the Continent, which it doth not fly round about. This Cut is very like to our last described: But they differ much in the bigness of the Bill and Head. *Gesper's* figure shews the Bill to be little, and the lower Chap crooked; whereas on the contrary (as I said) in ours the Bill was very long, and the upper Chap crooked. Besides, this hath no Crest, which is a manifest argument of diversity.

§. VI.

* The King of Birds of Paradise, Marggrav.

IT shews to be as big as a *Pigeon*, but was indeed not greater than a *Swallow*. It had a small Head, little Eyes, a straight, indifferently thick and sharp Bill, an Inch and half long. The Neck was an inch long: The length of the Body from the Head to the rife of the Tail scarce three inches and an half. The Wings were above seven inches long: The Tail broad, and six inches long. It had two Legs, the lower part of each two inches long: Four Toes in the Feet, three standing forwards, and one backward, after the usual manner; the middle Foretoe was a little longer than the rest: The back-toe was also of a good length; all armed with strong, crooked, Hawk-like Claws. Both Legs and Feet are thick and strong, made for rapine and preying. The Wings and Tail have broad and strong feathers, an inch wide. The whole back, the lower Belly, the Wings and Tail are of an elegant brown colour [*Brunni*.] Above next the Bill it hath feathers resembling Velvet, mingled of green and dusky: Beneath

Beneath next the Bill it hath like feathers of a black colour. The Neck above is of a yellow or gold colour; beneath of a green, with a gold-colour as it were shining through it. The Breast is of a deep brown. Under the Wings, in the sides between the Wings and the Legs grow many feathers, a foot long more or less, of a curious structure, which run forth a great way upon the Tail: Towards their rife they are of a deep yellow or gold colour, else of a whitish yellow, shadowed or dashed with brown. Among these feathers are extended two as it were threads or strings, each more than two feet long, near their rife of a yellow or gold colour, crooked towards their ends, and of a dark brown. Their Legs are dusky, their Talons being whiter. The Bill is of a colour mixt of green and blue, yet whitish toward the point.

§ VII.

* Marggravius his other Bird of Paradise.

IN bigness it exceeded a *Swallow*. It hath a small Head, a little compressed or flat above, two thirds of an inch long, in thickness or compass two inches: very little Eyes, about the bigness of a grain of *Millet* or *Mustard* Seed. The Bill strong above an inch long, straight, (yet upwards towards its Base somewhat rising) sharp, of a colour mingled of blue and green, with an oblong white spot in the upper Chap toward the point: wide, open Nostrils. The Neck a little more than two thirds of an inch long, straight, and of equal thickness with the head. The body from the end of the Neck to the beginning of the Tail was scarce four inches long, the thickness almost three; but it was covered with many feathers, which I do not here consider. The length of the Wings was five inches. Above on the head, at the rife of the Bill, it was adorned with very black, small, downy feathers, exactly resembling Velvet; and in like manner near the rife of the lower Bill, the black here being broader than above. In the whole throat or lower side of the Neck, and as far as the Cheeks and also to the Eyes, it was covered with silken feathers, a little harder to the touch than those black ones, of a most elegant golden green, such as is wont to be seen in the necks of *Peacocks* and *Mallards*. The whole upper part of the Head as far as that silken clothing, was also covered with silken feathers, but hard to the touch, of a dark yellow colour. The whole Neck encompassed with short feathers resembling Plush, of a shining yellow colour like Gold. The back was all covered with feathers of the like shining golden yellow, to the touch resembling hairs, lying many one upon another, which below were of a pale brown colour. The Wing-feathers are all one longer than another. The Tail consists of a few the like brown feathers, extended a little beyond the ends of the Wings, and is above three inches and an half long. At the very rife of the Wings, and without the Wings in each side grow many very elegant feathers, supported by small white ones: Some of these are six inches long, some a foot; but the middlemost and longest are a foot and half long, and white. All these feathers are most elegant, of a fine, thin, rare, or subtle texture. The number of feathers springing out of both sides amounts to about fifty in each; among which there are forty, a foot and half long apiece. *Clusius* and others, who take these long feathers to belong to the Wings, are mistaken; for they are not the Wing-feathers, but, as Marggravius truly hath delivered, spring out of each side under the Wings.

These two descriptions seem to be either of one and the same sort of bird, or of two very like; and agree in most things with the first Species of Aldrovandus.

§. VIII.

* Of Birds of Paradise out of *Clusius*.

I See that he [*Aldrovandus* he means] and all the rest who have treated of this bird, agree in this, that they judge it to want feet, because they had seen none but such as were bereaved of their feet. Hereupon they did not stick to charge *Antonius Pigafeta* (who accompanying *Magellane* in the Ship *Victoria*, first sailed round the World) with falsehood and lying, because after his return from that long Voyage, giving the first notice of this Bird to the *Europeans* in the Diary of his travel, he attributes to it slender Legs a * *Palm* long. For my part, though hitherto, I confess, I have been in the same erroneous opinion with them, in thinking these birds to be footless.

* An hand-breadth.

footlets (contrary to the sentence and judgment of *Aristotle*, who affirms that no bird wants feet) because those which I hapned to see, both in my *Spanish Voyage*, stopping two months at *Lisbon*, and also in the *Low Countries*, in the Cabinets of sundry persons delighted in such exotic things, were all without feet, and exenterated; yet at that time, to say the truth, I was not at all curious in observing, whether there were any difference between them. But the last Voyages of the *Hollanders* into *India* have made me without difficulty to change my opinion; it being certain that there have been some brought over entire, and retaining still their legs and feet: And by those who saw them I understood, that their Legs were very like those of a *Migpie*, but weaker, and not so thick, differing also in colour, as not being black, but tending to a Chestnut. Notwithstanding I had a great desire my self to see them, and if I could have got but one, presently to have taken a draught thereof, that I might expose it to the view of the Reader, and confirm the truth and faithfulness of *Pigafetta*. But they having been for their rarity presently bought up, and carried away to *Frankfurt* on the *Main*, and one of them thence to the Emperour *Rudolphus* the second of that name (his Majesty being, as I hear, greatly delighted in these kind of strange foreign things, and in the knowledge of all the wonders of nature) I was frustrated of my hope. But if it happens that there be any entire ones brought over, and that I get seasonable notice of it, I will do my endeavour to procure one, at least to borrow it, that I may set forth its figure, to confute and extirpate the commonly received opinion or conceit, that these birds want feet. Howbeit the Mariners that brought these Birds, though they went not to those Islands where the birds themselves breed and live, yet were informed (as I was assured) by those of whom they bought them, that they were all furnished with Feet, and did both walk and fly like other Birds: But that the Inhabitants so soon as they take them, do exenterate them, and cut off and cast away their Legs, and then expose them to the Sun, that they may dry the more readily, and so dried, either keep them to sell, or fatten them to their Helmets instead of Plumes of feathers. They added moreover, that those birds lived in Woods, and were wont to fly thirty or forty together in flocks, accompanied with their King or Captain, who always flies high above the rest; and (which seems to be fabulous) if they be thirsty, use to send out one of their company first to the water, to make trial of it, which if it receives no harm from drinking it, then the whole flock fly thither and drink: But if it returns sick or indisposed, the rest avoid that water, and fly away to seek out some other. They further added, that the Islanders were wont to taint and infect this water, for to catch these Birds, after this manner. When they espy a flock of Birds, they mark diligently whither they take themselves, and as soon as they see the bird that was sent out, after it hath drank flown back again, they presently cast poison into that water, which the whole flock coming to drink of, is infected, and becomes their prey. Besides, that these Birds were wont sometimes to be shot with Arrows: And if their *King* happens to be killed and fall down, the rest that are in that flock fall together with him, and yield themselves to be taken, as refusing to live after they have lost their *King*.

Furthermore, they made two kinds of those Birds: The one of the *Greater*, which were more beautiful, and the other of the *Lesser*, which were less beautiful: Affirming that both kinds have their peculiar *King*, and different in colour. That the birds of the *greater* kind (whose *King* is of an elegant and beautiful colour) were found only in the Ile *Aru* or *Arou* (for so that Vowel *u* is to be pronounced:) But that the Isles called *Papuas*, nigh to the Island *Gilolo*, did produce the birds of the *lesser* kind; and that their *King* was less handom, covered with black feathers, for bigness equal to a *Starling*, and having some feathers like horse-hairs. Perchance this black *King* may be the fourth *Species* set forth by *Aldrovandus*. Those that sold these Birds, being asked by the Mariners how they were called by the Inhabitants, answered *Boëres*, that is, Birds: For so they called all Birds, neither did they know how to distinguish them by peculiar names.

Now having seen a very elegant Bird of the greater sort, and bigger also than the rest of this kind, in the house of the famous *Peter Peronius*, Doctor of Physick, and primary Professor in the University of *Leyden*, I took care to get the figure thereof cut, that I might set it forth, subjoining a short History, as faithfully taken as I could; which should by right have taken up the first place in the fifth Book of *Exotics*: But seeing the six first Books are already printed off, I thought fit to insert it, with some other things I afterward got, into this *Antarium*.

§. IX.

* A Bird of Paradise of the greater sort. Cluf.

THE bulk of the body of this bird came near for bigness to that of a *Smallon*. From the top of the Head to the Rump it scarce exceeded five inches length. The Crown from the Bill to the Eyes and Neck was covered with very thick-set, short, little feathers, resembling filaments or thrums of Silk; their upper parts or ends being of a yellow colour, the lower, where they are inserted into the skin, dusky. The under-part of the Head, next to the lower Chap of the Bill, was very thick-set with thrums rather than feathers, being very short, and like to Velvet, of a deep black, from the Eyes as far as the Throat. The Throat as low down as the Breast was adorned with the like feathers or rather silken thrums, and those of a deep green, so beautiful and shining, that there cannot more elegant ones be seen in the Neck of the *mild Drake* or *Mallard*. The feathers covering the Breast were also exceeding fine and small, but longer, and very soft, of a black colour inclining to red, so that they seemed to be nothing but ends of Silk. The Bill was but small and sharp-pointed, an inch and half long, black in the part next the Head, the top being somewhat whitish. In the Head also near the Bill appeared very small footrests of Eyes. The Back, Belly, and Tail-feathers were of a ferrugineous or dusky red colour. The Tail it self consisted of ten pretty broad feathers, and was six inches and an half long; above which were two long and round feathers, somewhat like to Bow-string, or Shoo-makers threads, but stiff, and dusky, of two feet and three or four inches length, proceeding from the same original [or root or ground, viz. the Rump] with the feathers of the Tail, viz. being * jointly inserted into the Rump. These * were pretty thick at their rise, about their Quills or hollow part, from which they were set with frequent [thick-standing] hairy or downy thrums [filamina] such as other feathers are compounded of; for the space of four inches or a little more on the one side, and on the other for their third parts: Thence they grew slenderer by degrees to their very ends; and though they were destitute of those hairs, yet were they rough, as if they had been cut off. The feathers in the Wings were of various length: For some (to wit, the lowest which stood very thick) exceeded not the length of six inches; yea, some were shorter than so: Others were eight or nine inches long; others twelve; but the longest a foot and half: There is also in them great variety of colours; for some are of a shining golden colour, some, especially the narrower in the sides of the Wings, were of a dusky red, as it were a black sanguine, but shining: But those that covered the rest were of a pale ash-colour, and their sides thinner-set with villose or downy threads: In short, they were all very beautiful, which if I might I would willingly have got cut and set forth in a Table, but because they grew so thick, it could not conveniently be done without marring the shape of the whole Bird.

Another of the same kind I afterwards saw in the hands of that noble and learned Person *Joseph Scaliger*, somewhat lesser in bulk of body, as being but four inches and an half long from Head to Rump, but yet the feathers of the Tail were of the same length with those of that next above described; yet those round and long feathers like to Nerves, jointly springing out of the Rump, did not exceed the length of one foot and nine inches, else about their Quills set with the like hairs and downy thrums, on the one side to the length of three inches from the Quill, on the other to almost five; and thence they grew smaller to the very ends, and were something rough, especially about the ends, but not so as those of the precedent. The feathers in the Wings were likewise of a different length, as in the former: Neither was the bird very unlike to that, nor the variety of colours diverse from it; so that it seemed to differ only in age. The Bill was an inch and half long, in part dusky, the rest being white.

Besides I saw at his house another, somewhat lesser in bulk of body, and not so flat, having a very little Head, the Bill being of almost equal bigness with the precedents, but narrower, and of a bluish dusky colour, having two holes for respiration in the upper part next the Head, like the precedent. The Crown of the head was clothed with very short feathers, or rather hairs, like thrums of silk, but not of so elegant a colour as in the precedent, but of a kind of footy yellow. Besides, the border of feathers compassing the Bill on the upper side was not of that breadth as

in those, yet in like manner of a black colour: The Plumage also wherewith the Throat was covered was of a green shining colour as in the precedent, but not exceeding the breadth of ones little finger. The Back from the Neck to the Rump was indeed clothed with the like fine slender feathers; but of a different colour, viz. a yellowish ash-colour: But the Breast-feathers were of like colour with those of the precedent: The Plumage also of that part next the Rump agreed with theirs. Of what colour the Tail-feathers were I cannot tell, for that it wanted a Rump: For which cause I know not whether it had or wanted those long, round Nerves, with which as many Birds of this sort as I have yet seen were furnished. The Wing-feathers were of different length as in the former: Nor were they much unlike to them in colour; but those that were the longest had their sides thinner-set with downy filaments, and were of a much whiter colour than the feathers of the above described, being a foot and half long. Now whether that colour of the feathers covering the Back differing from the foregoing, makes or signifies diversity of Sex, as some think, I cannot say; but John de Weely told me, that this was of the second kind, viz. of those that are bred in the Islands *Papue*, and that such do indeed want those Nerves, but not the Tail, and for that cause * they cannot make the difference of Sex, as the Vulgar think.

* I suppose he means those two long Nerves or naked shafts of feathers.

A certain Citizen of *Leyden* had a bird altogether like to this last of *Scaliger*, wanting the Rump and Tail, and also those two long Nerves; which note whether it did distinguish all Birds of that kind from others, was to me unknown (because I had only observed these two, that had this note, as far as I remember: Or if I did before happen to see the like, they slipped out of my memory, because at that time I was not so diligent and curious in taking exact notice of the forms of these and the like birds) but (as I said a little before) John de Weely satisfied me and removed all doubt as to that point.

Further when I had proceeded thus far in treating of this Bird, the same John de Weely a Citizen and Merchant of *Amsterdam*, a very courteous and obliging person, who had sold the like Bird entire, with its Feet still remaining to it, to the Emperor, informed me this June, Anno 1605, (for I had enquired of him the May foregoing) that that Bird of Paradise was of the greater kind, which have those two Nerves growing out of their Rump, and that they have a flatter body, and not so round as those that are brought out of the *Papue* Islands: That its Feet were like a Hawks or a Pullets, very foul and unhandy, clapped close to the body of the bird, so that the Toes only appeared: And that he was of opinion, that all Birds of Paradise had the like feet; but that the Inhabitants for their ugliness and deformity did together with their Legs cut them off and cast them away. The something about the end of June he confirmed to me being present by word of mouth.

§. X.

* The supposed King of the greater Birds of Paradise.

That little Bird which I understood to be called the King of the greater sort of Birds of Paradise, was a very rare one. For though (as I said before) I had often seen Birds of Paradise both at *Lisbon* and other places, and the *Holland* Pilots and Ship-masters, who are now wont to sail yearly into the *East Indies*, coming back from their Voyages, do almost always bring home some of these Birds, yet was it never my hap to see a King, till the year 1603, viz. at *Amsterdam*, in the hands of a certain Merchant, who was wont to buy up such like exotic things among the Mariners returned home, that he might make a great profit by selling them again to others. But in the beginning of the following year *Emmanuel Swerts*, a very honest man, and Citizen of the same City, gave me notice that he had the like: Whereupon I prevailed with him to lend me the Bird for a few days, that I might describe it, and get its figure cut in a table. And seeing I have mentioned it a little before, and no man hitherto (as far as I know) hath set forth the like, I thought my self obliged in this place to propound its description, annexing its figure.

This Bird was less than other Birds of Paradise, and of different feathers: For from the Head to the Tail it scarce exceeded two inches length. Its head was very small, which together with its Bill was but an Inch and half long, of which length also the Tail was. But the Wings were much larger than the whole body of the bird, as being four Inches and an half long, and reaching two inches beyond the end of the

Tail.

Tail. The colour of the Bill was white, the upper parts being an inch long, was covered half way with elegant, short feathers or hairs, of a red colour, like silken thrums, as also the whole forepart of the head: The lower part of the Bill was likewise an inch long, yet a thought shorter than the upper. The middle part of the Head about the Eyes on each side had little black spots impressed. The Neck and Breast were covered with fine slender feathers of a deep red or sanguine colour, so that they seemed to be no more than certain silken thrums or filaments. All the covert-feathers of the Back, Wings, and Tail were almost of one and the same colour: Each Wing consisted of thirteen prime feathers, which were on the upper side of a dusky red, on the under side of a dusky yellow. The Tail contained seven or eight dusky or brown feathers. The lower or under side of the body under the Breast was adorned with a kind of ring of the breadth almost of ones little finger, consisting of black feathers as it were silken thrums. The feathers on the Belly were white, but those next the Wings black; and of those there were four or five in each side a little longer than the rest; viz. equal to two inches, and which ended in a broad top of a curious shining green, not unlike that of a *Mallards* Neck. Out of the Rump among the feathers of the Tail proceeded two strings as it were horse-hairs, slender, but stiff, seven or eight inches long, altogether black, only their ends for an inches length were reflected round, and on one side set with very fine hairs or downy threads, which were on the upper side of a deep shining green, beautiful to behold, almost like the feathers on a wild *Drake* or *Mallards* Neck, adding a great grace to the whole body of the Bird; but the under side of these feathers was of a dusky colour. I understood also that there were some Birds, which had those brittle strings, curling one another towards their ends.

CHAP. XIV.

The Cuckow. Cuculus.

Our *Bolognese* Fowlers (saith *Aldrovandus*) do unanimously affirm, that there are found a greater and a lesser sort of Cuckows; and besides, that the greater are of two kinds, which are distinguished one from the other by the only difference of colour: But that the lesser differ from the greater in nothing else but magnitude. We shall give figures of both the greater; the lesser we have not yet seen. So far *Aldrovandus*.

That which is common with us in *England* differs from the first of *Aldrovandus*, in that its Bill is liker a Thrushes or Blackbirds than a Ringdoves. Its length from the tip of the Bill to the end of the Tail is twelve inches. The upper Chap of the Bill somewhat hooked, and longer than the lower, for the most part of a dark or blackish colour; the nether of a pale or whitish yellow. The inside of the Mouth and the Tongue are of a deep yellow or Saffron colour: The Tongue not divided, the tip of it hard and pellucid. The Irides of the Eyes not yellow, as in *Aldrovandus* his second sort, but of a Hazel colour: The Nostrils round, wide, extant above the surface of the Bill; wherein it differs from all other birds I have yet seen. The lower eye-lid is the greater; the edges of the Eye-lids yellow.

The Throat, Breast, and Belly are white, with transverse dark lines, which are entire and not interrupted; wherein it agrees with *Aldrovandus* his second Cuckow. The black lines are thicker upon the throat, and have less white between them. The feathers of the Head are of a dark brown with white edges, [*Aldrovandus* saith, of a cinerous tending to a Chestnut colour] that we described had on the Head one or two white spots. The feathers on the middle of the Neck and Back, and also the long scapular feathers are brown with a tincture of red, having their edges whitish. The Rump ash-coloured.

The beam-feathers of the Wings are nineteen in number, the greater whereof are the blacker. All from the second have their exterior Vanes spotted with red: The interior Vanes of the outmost have long, transverse, white spots; the tips of all are white. The covert-feathers of the Wings are of the same colour with those on the Back, only the outmost darker.

The Tail in that described by *Aldrovandus* in the second place (for Mr. *Willughby* The Tail, omitted that in his Description) was made up of ten feathers, distinguished on both

O

sides

sides the shaft with white marks, somewhat resembling the figure of a heart, about an inch distant from each other, in a decent and lovely order, pleasant to behold. But the edges of the inner sides of all but the two middlemost, and the tops of all were adorned with white spots.

The Feet and Claws are yellow. It hath two back-toes; of which the interior is the least of all the Toes, and next to that the interior of the fore-toes. The Claws are something hollowed on the inside, especially the greatest: The two fore-toes are connected from the divarication to the first joint.

In the stomach dissected we found Caterpillars and other Insects. The Hedge-Sparrow [*Curruca*] is the Cuckow's Nurse, but not the Hedge-Sparrow only, (if *Curruca* be so rightly rendered) but also Ring-Doves, Larks, Finches. I myself with many others have seen a Wagtail feeding a young Cuckow. The Cuckow herself builds no Nest; but having found the Nest of some little bird, she either devours or destroys the Eggs she there finds, and in the room thereof lays one of her own, and so forsakes it. The filly bird returning, sits on this Egg, hatches it, and with a great deal of care and toil broods, feeds, and cherishes the young Cuckow for her own, until it be grown up and able to fly and shift for itself. Which thing seems so strange, monstrous, and absurd, that for my part I cannot sufficiently wonder there should be such an example in nature; nor could I have ever been induced to believe that such a thing had been done by Nature's instinct, had I not with my own eyes seen it. For Nature in other things is wont constantly to observe one and the same Law and Order agreeable to the highest reason and prudence: Which in this case is, that the Dams make Nests for themselves, if need be, sit upon their own Eggs, and bring up their Young after they are hatcht.

What becomes of the Cuckow in Winter.

What becomes of the Cuckow in the Winter-time, whether hiding her self in hollow Trees, or other holes and Caverns, she lies torpid, and at the return of the Spring revives again; or rather at the approach of Winter, being impatient of cold, shifts place and departs into hot Countries, is not as yet to me certainly known. *Aldrovandus* writes, that it is by long observation found, that she doth in the Winter enter into the hollows of trees, or the Caverns of Rocks and the earth, and there lie hid all that season. Some (saith he) tell a story of a certain Country-man of Zurich in Switzerland, who having laid a Log on the fire in Winter, heard a Cuckow cry in it. For being of a very tender nature, and impatient of cold (as Aristotle witnesseth) no wonder, if to avoid the Winter-cold, it hide it self in holes, especially seeing at that time it moults its feathers. We also have heard of the like stories in England, and have known some who have affirmed themselves in the middle of Winter, in a more than usually mild and warm season, to have heard the voice of the Cuckow. But seeing it is most certain, that many sorts of Birds do at certain Seasons of the year shift places, and depart into other Countries, as for example Quails, Woodcocks, Fieldfares, Storks, &c. Why may not Cuckows also do the same? For my part I never yet met with any credible person that dared affirm, that himself had found or seen a Cuckow in Winter-time taken out of a hollow tree, or any other lurking-place.

Since the writing of this, reading Jo. Faber his Expositions of the Pictures of some Mexican Animals of Nardi Antonio Recchi, I find alleged the testimony of a credible person and an eye-witness, one Theophilus Molitor, a Friend of Faber's, for this lurking of Cuckows in hollow trees. Molitor affirmed this to have hapned at his Fathers house. His Grandfathers Servants having stocked up in a certain Meadow some old, dry, rotten Willows, and brought them home, and cast the heads of two of them into the Furnace to heat the Stove, heard as they were in the Stove a Cuckow singing three times. Wondering at this cry of the Cuckow in the Winter-time, out they go, and drawing the heads of the Willows out of the Furnace, in the one of them they observed something move; wherefore taking an Axe they opened the hole, and thrusting in their hands, first they plucked out nothing but meer feathers: Afterward they got hold of a living Animal, that was the very Cuckow, and drew it out. It was indeed brisk and lively, but wholly naked and bare of feathers, and without any Winter-provision of food, which Cuckow the Boys kept two whole years in the Stove.

* *Aldrovandus* his first sort of Cuckow.

This differs in many respects from the precedent, as first, in that the transverse lines on the Breast are not continued, but interrupted. Secondly, in that the covert-feathers of the Neck, Back, and Wings are almost all parti-coloured of black and ferrugineous.

ferrugineous. Thirdly, The *Remiges* elsewhere black, in the middle and round the edges white. Fourthly, The Tail variegated with three colours, black, white, and ferrugineous. The black in each feather consists of two lines, concurring in the middle of the feather in an acute angle, and standing at equal distances in a certain Series or order to the end of the Tail: The ferrugineous takes up the outsidings of the intermediate spaces, and the white the middle.

LIB. I. PART I. SECT. II.

Of Nocturnal Rapacious Birds.

Rapacious Nocturnal Birds are of two kinds, viz. Eared or horned, and such as want Ears. To these we shall subjoin the Goat-sucker, which yet we believe not to be Rapacious, but to have it self so to Owls as the Cuckow to Hawks.

Of Rapacious Nocturnal Birds we have in England four sorts besides the Goat-sucker. 1. The Horn-Owl, in Latine *Otus* or *Alo*, so called from certain small feathers sticking out on the sides of the head, in forms of Horns or Ears. 2. The White-Owl, called also the Church-Owl or Barn-Owl; by *Aldrovandus* *Aluco minor*. 3. The Brown Owl, Screech-Owl, or Ivy-Owl: *Strix Aldrovandi*. 4. The Grey Owl: *Strix cinerea*.

CHAP. I.

Of Rapacious Nocturnal Birds Horned or Eared.

§. I.

* The great Horn-Owl or Eagle-Owl. *Bubo*.

OF this Bird *Aldrovandus* gives us three figures, and three descriptions, which I suspect to be all of one and the same sort: The first is taken out of *Gesner*, the two last were composed by himself, of his own observation. The first (they are *Gesner's* words) was as big or bigger than a Goose; had great Wings, two Feet, and three inches long, when extended in a right line from their beginning to the end of the longest feather, from the top of the uppermost bone of the Wing, to the lowest end was in a right line thirteen inches. The Head both for shape and bigness was like a Cat, for which reason the French do not improperly call it *Chat huant* [*q. felis gembunda*]. Above each Ear stuck out black feathers, three inches high. The Eyes were great: The feathers about the Rump thick and very soft, of more than a fingers length, or an handful high, if my memory fail me not. From the point of the Bill to the end of the Feet or of the Tail (for they were both equally extended) it was two foot and seven inches long. The Irides of the Eyes were of a deep shining yellow or Saffron-colour. The Bill short, black, and hooked. The feathers being put aside the Ear-holes came into sight, which were great and open. On both sides by the Nostrils grew hair-like feathers, as it were beards [*barbulae*]. The colour of the feathers all over the body was various, of whitish, black, and reddish spots. The length of the Leg was thirteen inches: The part above the knee thick and brawny: The Claws black, hooked, and very sharp: The Foot hairy or feathered down to the very Claws, the feathers being of a pale red.

2. The second (saith *Aldrovandus*) for bigness agreed exactly with this, but differed in many other particulars. For thoughts Feet were indeed hairy down to the Claws, as in that, yet shorter and slenderer, neither so brawny above the knees, nor so thick and strong-thanked. The colour of the whole body was fulvous [or of a rusty ash-colour] especially of the Breast, where it was marked with blackish spots drawn long-ways, promiscuously here and there in no order. The Back and Wings are of a darker brown or ferrugineous dusky colour. But the main difference is that that of *Gesner* hath all the particular feathers of its whole body more variegated with

certain tranſverſe narrow lines like the feathers of ſome kinds of Ducks, Partridges, and Hawks. Beſides, it differs in that the whole body, but eſpecially the Back and Head are marked with certain black ſtrakes, irregularly drawn, and as it were figured; whereas mine (ſaith he) was not ſo painted, but in the great feathers of the Wings and Tail diſtinguiſhed with broad, tranſverſe, blackiſh lines or bars; which lines are ſo formed, eſpecially in the Tail, that each of the broader are terminated above and below by other narrower ones, like borders or fringes, diſpoſed in a triple order, and at certain intervals diſtant from each other, as in Hawks. This had great and very ſharp Talons, not black, as in that, but of a horn-colour. The Tail in both was very ſhort.

3. The third was in all things like the ſecond, ſave that the Legs were not hairy, and both Legs and Feet weak.

Of this kind of Owl we ſaw one in France at the Kings Palace of *Bois de Vincennes*: And two in his Majesties Park of *St. James* near *Weſtminſter*. They were as big as *Eagles*: Their Legs and Feet hairy down to the Claws. They had three fore-toes in each foot; but the outmoſt of them was ſo framed that it could be turned backward, and made ſtand like a hind-toe. So that in that reſpect there is no difference between this and other ſorts of *Owls*, but this may as well be ſaid to have two back toes as they; whatever *Aldrovandus* hath delivered to the contrary. Their colour was much like to that of a *Bittour*, the feathers being marked with long black ſtroaks in the middle, the outſides of a light bay. About the Belly ſome of the feathers were beautified with tranſverſe lines. The *Irides* of the Eyes were of a reddiſh yellow or flame colour, [rather of a golden.]

That Owl which *Margravins* deſcribes under the name of *Jacurutu* of the *Braſilians*, ſeems to be altogether the ſame with this. It is (ſaith he) for bignefs equal to a *Goofe*: Hath a round Head like a Cat; a hooked black Bill, the upper Chap being longer: Great, riſing, round Eyes, ſhining like Cryſtal, compaſſed toward the outſide with a Circle of yellow. The Circumference of the Eye ſomething greater than a *Mifſian** groſs. Near the Ear-holes it hath feathers two inches long, which ſtick up, and end in a ſharp point like Ears. The Tail is broad; the Wings reach not to the end of it. The Legs are feathered down to the Feet, in which are four Toes, three ſtanding forward, and one backward, and in each a crooked black Talon, above an inch long, and very ſharp. The feathers of the whole body are elegantly variegated with yellow, white, and black.

It is ſaid to build on high and inacceſſible Rocks: It preys not only on ſmall birds, but alſo *Conies* and *Hares* like the *Eagle*. Yea, (ſaith *Aldrovandus*) there is no Animal gathers ſo much prey by night as this Owl, eſpecially when the brings up her Young. For the not only provides ſufficient for her ſelf and hers, but is very advantageous to them that find her Neſt. For while the flies out a pourveying for more, they privily ſteal away that ſhe had before laid up, only leaving ſo much as may ſuffice for nourifhing the Young.

§. II.

The Horn-Owl, *Otus ſive Aſio*.

That we deſcribed was a Female: It weighed ten ounces: Its length from the point of the Bill to the end of the Tail was fourteen Inches and an half: Its breadth, meaſuring from tip to tip of the Wings extended, three foot and four inches. The Bill was black, from the point to the Angles of the Mouth one inch and half quarter: The Tongue fleſhy, and a little divided. The *Irides* of the Eyes of a lovely yellow: The covers of the Ears large. The ring of feathers, compaſſing the face like a womans hood, conſiſts of a double row, the exterior variegated with ſmall white, black, and red lines; the interior under the Eyes red; where they are contiguous both black. The forehead or ends of the two wreaths at the Bill more cinereous.

The feathers which cover the lower Belly and Legs are reddiſh; in the Throat and Breaſt the middle parts of the feathers are black, the outer parts partly white, and partly yellow: Thoſe under the Wings are red. At the bottoms of the foremoſt beam-feathers is a great tranſverſe black ſpot: Higher in the very bending, and under the ballard-wing a broad bed or border of black: The reſt of the covert-feathers of the Wings are parti-coloured, of a dark cinereous and yellow. The Back was of the ſame

Its weight,
length, and
breadth.

Its Beak,
Tongue,
Eyes,
hood of feathers.

Colour of the
feathers.

ſame colour with the Wings; the middle of each feather being for the moſt part black. The Horns were above an Inch long, conſiſting of fix feathers, the middle parts of which were black, the exterior edges being red, the interior white, ſprinkled with duſky ſpecks.

The Tail was made up of twelve feathers, ſix inches long; the exterior being ſhorteſt, and the reſt in order longer to the middlemoſt, ſo that when ſpread it was terminated in a circular Circumference; croſſed with fix or ſeven black bars, but narrower than in other birds of this kind: The intermediate ſpaces above were of an aſh-colour, below of a yellow.

The flag-feathers of the Wings, were in each twenty four, of the ſame colour with thoſe of the Tail, but in the outmoſt, eſpecially the third, fourth, and fifth, there is a broad ſtrake or bed of red toward the bottom, and in the greater feathers the black bars are much broader than in the leſſer.

The Legs and Feet are feathered down to the very Claws, which are black; that of the middle toe on the inſide flattened into an edge. The outmoſt of the fore-toes may be turned backwards, as in other *Owls*.

It had a large Gall. The Guts were twenty inches long, the *Appendices* or blind-guts two inches and a quarter, longer and more tunid than in other carnivorous birds. In the ſtomach we found bones and fur of Mice.

About *Bologna*, and elſewhere in *Italy*, it is frequent: Found in *England* alſo, but more rarely. *Francis Jeſſop* Eſq; ſent it to us out of *Yorkſhire*.

This Bird is in all things exactly like the great *Eagle-Owl* or *Bubo*, ſave in bignefs; whence alſo the French call it by the ſame name with the only addition of leſſer. *Aldrovandus* writes, that it agrees with the *Bubo* in the ſtructure or rather ſituation of its Toes, both theſe having three fore-toes, and one back one, whereas all the reſt of this kind have two fore-toes, and two hind ones: But in thoſe we have obſerved both great and leſſer Horn-Owls [*Otis & Bubonibus*] the Toes were diſpoſed in like manner as in other *Owls*. For the outmoſt fore-toe may be turned to ſtand backward, and ſo imitate a hind-toe, and perform the ſame office.

Aldrovandus deſcribes two ſorts of *Aſio*, or the leſſer Horn-Owl. The deſcription of the former doth in moſt particulars agree to the Bird we have deſcribed: See and compare both deſcriptions. *Bellonius* his *Otus* is without doubt the ſame with ours.

Theſe do for the moſt part frequent and abide in mountainous places, whereas on the contrary, our Church-Owl and brown Owl, &c. delight in lower and plain Countys.

§. III.

* The little Horn-Owl, *Scops Aldrovandi*.

The Bird which the *Italians*, eſpecially about *Bononia* call *Chinnino* is the leaſt ſave one of all Rapacious Nocturnal Birds, bigger than a *Thruſh*, and ſomewhat leſſer than a *Pigeon*, full nine inches long. It differs from the *Bubo* only in magnitude, and ſomething in colour. Its Head is round like a Ball, covered with ſmall ſoft feathers, all over of a lead-colour. The Bill ſhort, hooked, and black. The Ears or feathers ſtanding up in ſhadow of Ears, ſcarce appear in a dead bird, but are more manifeſt in a living, and conſiſt only of one feather apiece. The chief colour of the whole body, as far as appears to fight, is cinereous, having here and there ſomethi of plumbeous mingled with it, curiouſly ſpeckled with many white ſpots, more elegantly than any other Nocturnal Rapacious bird. In the greater feathers of the Wings and Tail it is marked with tranſverſe white ſpots: All the other feathers beſides the tranſverſe marks are diſtinguiſhed long-ways with a black line running through their middles. It is alſo beſprinkled all over with a lovely tincture of red, eſpecially about the Neck and the beginning of the Wings. The feathers on the Belly are whiter than elſewhere, the bottom or lower part of them, as alſo of all the reſt, being black: particularly, theſe are red about the middle, elſe white, powdered with very ſmall black ſpecks. The Eyes like moſt other night-birds of a fiery ſhining Saffron colour: The Legs feathered, and of a reddiſh aſh-colour: The Feet ſmall, naked, ſcaly, approaching to a dark lead-colour, divided into two fore, and two back-toes, armed with duſky Claws. This is common in *Italy*.

Of this ſort *Aldrovandus* mentions another found in *Germany*, whiter, and having a longer Tail, and longer Ears or Horns than the *Italian Chinnino*, in other reſpects like.

C H A P.

CHAP. II.

Of Nocturnal Rapacious Birds without Ears or Horns.

§. I.

The common brown or Ivy-Owl, Strix. Aldrov.

THe Bird we described was a Cock; It was about the bigness of a Pigeon, but rounder-bodied, and seeming bigger than it was. It weighed twelve ounces and an half. Its length from the tip of the beak to the end of the Tail was fourteen inches: Its breadth, or the distance between the extremities of the Wings spread, two feet and nine inches.

The Bill from the point to the angles of the mouth was an inch long or more, of a horn-colour, or rather a light blue. The mouth was wider, but the Bill shorter than in the Barn-Owl. The Tongue not very fleshy, nor broad, a little divided at the tip. In the Palate was a cavity equal to the Tongue. It hath huge Eyes, at least twice so big as those of the Barn or white Owl, and protuberant. It had Membranes for Nictation, drawn from above downwards, having black edges. The borders of the Eye-lids were broader than ordinary, and their edges red. The Ear-holes were three times as great as in the white Owl, and covered with Valves. A circle of feathers encompasses the Eyes and Chin, like a womans hood, as in the Barn-Owl, but not standing up so high as in that. This circle or hood consists of a double row of feathers, the exterior more rigid, variegated with white, black, and red; the interior consisting of soft feathers, of a white mingled with a flame-colour. The middle part of the head without the hood is of a dark brown. The exterior circle of the hood compasses the ears; the greatest part of the interior feathers of it, where it passes the ears, grows out of the covers of the Ears. The Eyes in this Bird are nearer to the Ears than in any other Animal I know. Beyond the Nostrils and below the Eyes grew bristly feathers having black shafts. The back and upper side of the body was particoloured of ferruginous and dark brown, the black taking up the middle part of each feather, and the ferruginous the out-sides. If one curiously view and observe each single feather, one shall find them waved with transverse lines, cinereous and brown alternately succeeding each other. The belly and lower side of the body is of the same colour with the back, but more dilute with a mixture of white. The bottoms of all the feathers are black. In this and other Owls the feathers investing the whole body are longer or taller than in most other birds, so that the bird seems to be much bigger than indeed it is. The feet are covered almost down to the Claws with a thick dirty-white Plumage, sprinkled with small dark specks, [rather waved with dark lines] only two or three of the annular scales bare.

The number of flag-feathers in each Wing was twenty four. The exterior [pin-mule] webs of the outmost whercof were terminated in slender points like bristles, separate from each other, and standing like the teeth of a fine Comb. The Wing and Tail-feathers were marked with six or seven cross bars of a dirty white, tinted in some with ferruginous, and in some with brown. The Wings complicated fall very much short of the end of the Tail. The covert feathers of the Wings, chiefly those about the middle, and those long ones springing from the shoulders were spotted with white, especially their interior Vanes.

The Tail was six inches and an half long, made up of twelve feathers, the middlemost being the longest, the rest in order shorter to the outmost: All ending in sharp points, whereas in those of the Barn-Owl the tops were blunt.

The foal of the foot was callous, of a horny or blackish colour. That of the middle-toe had not the inner edge serrate, as in the white Owl. All the toes were separate to the very divarication. The outmost of the fore-toes is made to turn also backward, and supply the room of a back-toe, as in the rest of this kind.

The Guts were thirty inches long, and had many revolutions. The blind Guts were five inches and an half long, toward their ends rumid and full of excrement: The Liver divided into two Lobes. It had a large Gall; great black Testicles. The stomach seemed to be more fleshy than in other carnivorous birds: and above it a granulated *Echinus* or ante-stomach. In the stomach we found the fur of Mice.

It

It differs remarkably from the white Owl in that the extreme feather of the Wing is little, and at least a hand-breadth shorter than the third and fourth; the second above an inch shorter than the third, and the fourth and fifth the longest of all; whereas in that the second and third feathers are the longest, and the extreme or Sarcel wants not half an inch of them.

Aldrovandus writes, that the Country-people about Bononia told him, that his Strix or Screech-Owl used to suck their Goats: which ours (as far as I have heard) was never complained of for doing.

§. II.

The Grey Owl, Strix cinerea.

ANother Bird of this sort we described, which we found first at Vienna in Austria, and afterward in England also. It weighed eleven ounces and an half. The length from the Bill to end of the Tail or Feet (for they were equally extended) was fourteen inches and an half: The breadth between the tips of the Wings spread out two foot and eleven inches. The Bill was an inch and quarter long: The Tongue a little divided, not so fleshy as in Hawks. In the Palate it had a broad open fissure or cleft. The Nostrils were oblong. The Sear or skin covering the Base of the Beak in diurnal Rapacious birds, was wanting in this, as in all other Owls. It had huge, round Eyes; the *Strides* being of a dark Hazel colour. Both upper and lower Eye-lid terminate in a membrane having black edges. The Ear-holes were great and furnished with Valves.

This Bird was for the apparent magnitude very light and full of feathers. A wreath or hood of stiffer feathers parti-coloured of white and black, beginning from the Bill above, and reaching beyond the Ears, encompasses the Face and Eyes; the ends meeting under the Chin like a womans hood. Within this greater hood another circle of feathers of an ash-colour, consisting of thinner and shorter hairs encompasses the Eyes. The body is all over variegated with cinereous and brown. The shafts of the feathers in the middle of the back are black. The interior Vanes of the long scapular feathers are white almost to the shafts. The lower belly is white. On the Breast are long black spots.

The first row of Wing-feathers had cross bars of black and reddish ash-colour. In the third row of the covert-feathers of the Wings were one or two white spots.

The Tail had twelve feathers, seven inches and a quarter long, the middlemost feathers being longest, and the rest in order to the outmost somewhat shorter.

The Feet were feathered almost down to the Claws, only two or three annular scales naked. The sole of the foot callous, and of a yellowish colour, as it were granulated with little knobs. The Toes, as in other Night-birds, two standing forward, and two backward. The inner side of the Claw of the outer fore-toe is flattened into an edge.

The length of the Guts was twenty two inches, of the blind Guts three and an half.

The name *Strix* some think is taken from the Verb *stringere*, because it strangles people when they are asleep. *Ovid* will have it to called à *stridore*, from the screeching noise it makes:

*Est illis Strigibus nomen, sed nominis hujus
Causa, quod horrenda stridere nocte solent.*

This is like the precedent, and of equal bigness, from which yet it is distinguished by manifest notes, and which argue a specific difference. The chief of those are:

1. That this is grey, that brown. 2. That this hath long spots on the Breast, which that wants. 3. That the interior hood in this is particoloured only of dusky and white.

§. III.

§. III.

The common Barn-Owl, or White-Owl, or Church-Owl. *Aluco minor, Aldrov.*

Its bigness
and measures.

The Bill,
Tongue,
Hood,

Ear-valve.

Colour of the
feathers of
the body.

The Wing-
feathers.

* Hair-like
hairs, compo-
sounding the
web of the
feather.
The Tail.

The legs, feet,
and toes.

The Guts.

The strange
figure of the
Eyes.

The Cock (which we described) was about the bigness of a Pigeon ; weighed eleven ounces and an half. Its length from the tip of the Bill to the end of the Tail was fourteen inches. The distance between the extremities of the Wings spread out three foot and one inch and half. The Bill white, hooked at the end, more than an inch and half long : The Tongue a little divided at the tip ; the Nostrils oblong. A circle or wreath of white, soft, downy feathers encompassed with yellow ones, beginning from the Nostrils on each side, passed round the Eyes and under the Chin, somewhat resembling a black hood, such as women use to wear : So that the Eyes were sunk in the middle of these feathers, as it were in the bottom of a Pit or Valley. At the interior angle of each Eye the lower parts of these feathers were of a tawny colour. The Ears were covered with a Valve, which arises near the Eye, and falls backwards. The interior circle we mentioned of white, downy feathers passed just over this Valve, so that part of them grew out of it.

The Breast, Belly, and covert-feathers of the inside of the Wings were white, marked with a few quadrangular dark spots. The Head, Neck, and Back, as far as the prime feathers of the Wings, variously and of all Night-birds most elegantly coloured. The feathers toward the tips were waved with small whitish and blackish lines, resembling a grey colour ; but about the shaft of each feather there was as it were a bed or row of black and white spots, situate long-ways, made up in some of two white and two black spots, in some of three of each colour, in some of but one. Else the whole Plumage was of a dilute tawny or orange colour ; which same colour was also the field or ground in the Wings and Tail.

The master-feathers in each Wing were in number twenty four ; whereof the greater have four transverse blackish bars. [In these bars in the exterior Vane of the feather there is also white mingled with the black, which makes an appearance of a grey spot.] The intermediate spaces are fulvous, and powdered with small black specks ; the tips of these feathers incline more to an ash-colour. The Wings when shut up extend full as far or further than the end of the Tail. In the exterior Vanes of the first or outmost feather of each Wing the ends of the * *Pinnule* are not contiguous one to another, but stand at distance, like the teeth of a fine Comb.

The Tail is made up of twelve feathers, of the same colour with the Wings, having four transverse black bars : four inches and half long. The interior margins of the feathers both of Wings and Tail are white.

The Legs are covered with a thick Down to the Feet, but the Toes are only hairy, the hairs also thin-set. The Claw of the middle Toe is ferrate on the inside as in *Hierons*, but not so manifestly. It hath but one Toe that stands backward ; but the outmost fore-toe may be turned so as to stand a little backward.

The Guts were eighteen inches long ; the blind Guts but two. It had a large Gall : Its Eggs were white.

Aldrovandus his description agrees exactly with ours.

The Eye in this Bird, and I suppose in all the rest of this kind, is of a strange and singular structure. That part which appears outwardly, though great, is only the *Iris*. For the whole bulb or ball of the Eye when taken out somewhat resembles a hat or Helmet, the *Iris* being the Crown, the part not appearing and extending it self good way further, the brims. The interior edges of the Eye-lids round about are yellow. The Eyes are altogether fixt and immovable.

The Bird is described by *Marggravius* under the title of *Thuidara of Brasili* ; so that it seems it is common with us to the *New World*.

§. IV.

* *Aldrovandus* his former *Aluco*.

This is bigger than the precedent, but (saith my Author) lesser than the *Otus* or *Horn-Owl*. This is peculiar to them all, that they cover the Eye only by drawing the upper lid over it downward. It hath a circle, as it were a Crown, made up of feathers, which encompass the whole face, passing above the Eyes like tall Eye-

Eye-brows, descending on both sides by the Temples, and meeting under the Chin, somewhat like a woman's black hood. The Eyes are great, wholly black, without any diversity of colour, sunk, as it were, in a deep cavity, made by this circle of erected feathers. The prone side, viz. the Breast and Belly, spotted with indifferently great black spots. The Bill white, very much hooked, as also the Claws. The Legs covered with white feathers, but the Feet only with hairs. The Back is of a Lead-colour variegated with whitish specks. The whole body covered with a deep and thick-set Plumage ; which makes it appear to be of the bulk of a Capon, whereas when plucked it is scarce so big as a chicken. The Wings are large, and reach beyond the end of the Tail. This out of *Aldrovandus*.

§. V.

* *Aldrovandus* his grey Owl. *Ullula Aldrov.* as also *Gefners*, *Ullula Gefn.*

The Bird signified by the name *Ullula* in *Latine*, *Owl* or *Howlet* in *English*, *Hulot* in *French*, *Ul* or *Eul* in *Dutch* was doubtless so denominated from the howling noise that it makes : *Howl* in *English* and *Dutch* signifying the same that *Ullulo* or *ejulo* in *Latine*. Wherefore the Bird which *Aldrovandus* exhibits under this title, fith it makes a noise like a Chicken, he will not confidently aver to be the *Ullula*, but if it may be referred to any of the *Species* of Night-birds mentioned by the Ancients, he knows not whither more commodiously than to this.

From the Bill to the end of the Tail it was eighteen inches long. The Head, Back, Wings, and Tail were of an ash-colour, speckled with whitish and black spots. Under the Belly it was white, variegated with blackish spots. The Head was very great, enormously thick, round, full of feathers : The Eyes being wholly black, and encompassed round with white, soft feathers ; within the ring or *Ambit* whereof at the borders of the Eye-lids was seen as it were a red circle. In winking the Eye was covered only with the upper Eye-lid. The Bill was hooked and greenish : The Nostrils great and patent : The Wings very large, eighteen inches long, reaching to the very end of the Tail. The Legs were hairy down to the Claws, which were ash-coloured, hooked, and exceeding sharp. It had four Toes, two standing forward, and two backward.

Aldrovandus kept this bird three months at his house.

This seems to be the same with our Grey Owl before described by the title of *Strix*, *cimera*.

Gefner describes his *Ullula* in these words. It was as big as a Hen or bigger ; the colour red ; sprinkled with black : The Bill white, short, as in other *Night-birds*, hooked, so that the upper Chap is much longer than the nether : The Eyes great, black, the Pupil being of an obscure red. The edges of the Eye-lids were red. Moreover, the Eyes were covered with a nictating Membrane. Between the Eyes and Back it was thick-feathered, of an ash-colour. The Neck was very agile, so that she could turn her head much backward. The Legs were whitish, sprinkled with livid specks, rough down to the Feet. The Toes stood two forward, two backward.

It hath not been our hap as yet to see a Bird of this kind, if it be distinct from our * *Grey Owl*. For that bird which by us in *England* is called *Owl*, and *Howlet*, and *Madge-howlet* is the *Aluco* of *Gefner* and *Aldrovandus*. Although *Owl* be with us a general name attributed to all *Night-birds*.

§. VI.

The little Owl. *Noctua*.

The Bird we described of this kind we bought in the Market at *Vienna* in *Austria*, where they called it *Schaffilt*.

It was a Cock, scarce so big as a *Blackbird*. Its length from the Bill to the end of the tail was almost seven inches : Its breadth, the Wings being extended, more than fourteen inches. The Bill was white, and like to that of other *Owls*. The Tongue a little divided, as in the rest of this Tribe : The Palate below black, having a wide or gaping cleft, and below it a round hole : The Nostrils oblong : The Ears great : The Eyes lesser and handsomer than in other *Owls*.

P

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Hood, The wreath or circle of feathers encompassing the face, beyond the Ears lesser, and less easily discernable. The upper part of the body was of a dark brown, with a mixture of red, having transverse whitish spots.

Colour of the upper side. The Tail was 2 $\frac{1}{2}$ inches long, compounded of twelve feathers exactly equal, having five or six transverse white bars.

Its Tail, The feathers about the Ears were more variegated with black and white. The Chin and lower part of the belly white; The Breast marked with long dusky spots.

Colour of the under side. The number of beam-feathers in each Wing was twenty four; their interior webs were spotted with round white spots.

Wing-feathers, It was feathered almost down to the Claws, excepting two or three annular scales. The Feet were of a pale yellow. It had two back-toes, and as many foreones. The soles of the Feet were yellow; the Claws black: The inner side of the middle Claw is thinned into an edge.

Legs, Feet, and Talons. It had a great Gall; the length of the Guts was ten Inches; of the blind Guts one inch and a quarter.

Gall and Guts. It is found in the Woods of *Austria*, but rarely; resembles much *Gefners* figure of *Noctua*, which therefore we have taken for it. Afterwards we saw it exposed to sale at *Rome*. They use it for catching of small birds: See the manner in *Oline*.

Its place. *Aldrovandus* saith that it was told him, that the *Germans* do sometimes take in their Country a sort of little *Owl*, which when come to its full growth is no bigger than a *Lark*, which they call by a diminutive name *Kentzin*; but however *Aldrovandus* hapned not to see it, the same bird is doubtless also found in *Italy*; for we observed them at *Rome* standing on *Pearches* to be sold; and we can hardly believe, they brought them so far as out of *Germany*.

Use.

§. VII.

* *Aldrovandus his Noctua*.

That which *Aldrovandus* hath described and figured for the *Noctua* is about the bigness of a *Dove*, nine inches long, hath a great Head, flat above; large, grey Eyes. The feathers of the whole body are partly of a pale Chestnut colour, partly distinguished with white. Through the extreme parts of the Wings, especially the prime feathers, it hath broad transverse lines or bars of a Chestnut colour. On the Belly it hath lines or spots of the same colour drawn longways, but inverted; the rest of the space or ground (the *Heralds* call it the field) being white. The Wings when withdrawn and closed reach as far as the end of the Tail. The Legs are feathered and rough down to the Feet, of a colour compounded of cinereous and Chestnut. The Toes are of a dark cinereous, bare of feathers, two standing each way. The Claws black, sharp, and crooked.

* The *Stone-Owl*, another sort of *Noctua*, or perchance the same with the precedent.

This (saith he) which the *Germans* call *Steinkutz*, that is, *Stone-Owl*, is also about the bigness of a *Dove*; hath the Legs and Toes rough, with white feathers, but the lower sides of the Toes are bare, the Claws black and hooked. The colour all over the prone or nether side of the body was a dark brown, with a slight mixture of red, dappled with whitish spots. The Head in respect of the body very great: The Eyes large: The Bill short, and like an *Eagles*. In the dead bird the upper Chap of the Bill was red, which seemed not to be so before, while it was living. Between the Eyes and the Bill grew certain stiff, slender feathers, like bristles or beards. It had more white on the Belly than the other parts. I suppose it lives and frequents chiefly in Mountainous and Rocky places, and therefore to defend the cold hath its Feet and Toes feathered like the *Lagopus* and *Grygallus*. For the other *Noctua* have not their Feet rough, neither are they of a reddish colour. They seem to be less brisk and lively than our *Italian Noctua*, and almost blind in the day time.

§. VIII.

§. VIII.

* The *Brazilian Noctua* called *Cabure* by *Marggrav*.

It's about the bigness of a *Throfile*: hath a round Head, a short, hooked, yellowish Bill; two Nostrils; fair, great, round, yellow Eyes, with a black Pupil. Under the Eyes, and on each side the Bill it hath many long, dusky hairs. The Legs are short, wholly clothed with feathers, yellow, as are also the Feet, which are cloven into four Toes, standing after the usual manner, armed with semicircular, crooked, sharp Talons: The Tail broad, nigh the rise whereof the Wings end. In the Head, Back, Wings, and Tail it is of a dilute *Umber* colour, and variegated in the Head and Neck with very small, in the Wings with greater white spots. The Tail is waved with white. The Breast and lower Belly are white, and variegated with spots of a dilute *Umber* colour. It is easily made tame. It can so turn about its Neck, that the tip of the Beak shall exactly point at the middle of the Back. It plays with men like an *Ape*, making many mowes and antic mimical faces, and snapping with its Bill. Besides, it can set up feathers on the sides of its head, that represent Horns or Ears. It lives upon raw flesh.

CHAP. III. §. I.

The *Fern-Owl*, or *Churn-Owl*, or *Goat-fucker*, *Caprimulgus*.

Its length from the Bill to the end of the Tail was between ten and eleven inches: Its Head great, but much lesser than in the *Owl-kind*: Its Bill in proportion to its body the least of all birds, and a little crooked. It hath a huge wide mouth and swallow. *In palato appendices nulle, sed primum longa fissura, fundo tenni ossiculo seu septo per medium diviso: infra eam fissuram alia latior & brevior, & ad latus fundum linea appendicium transversa.* These words I do not well understand, and therefore havenot put them into *English*. On the sides of the upper Chap of the Bill, as also under the Chin it had stiff black hairs like bristles.

The under side of the body was painted with black and pale-red lines, transverse, but not continued: The hinder part of the Head of an ash-colour, the middle of each feather being black; which colours also reach lower down the Back.

The Wings are particoloured of black and red: The covert-feathers of the Wings are some of them powdered with cinereous. The Tail near five inches long, made up of ten feathers, the outmost whereof are something shorter than the rest; the middlemost ash-coloured, with very narrow, transverse, black bars; in the rest the cross bars are broader, and the intermediate spaces of an ash-colour, powdered with black, and a little tintured with red.

The Legs were very small in proportion, feathered on the fore-side half way, but the feathers hung down almost to the Toes. The Toes were blackish, and the Claws black and little; the middlemost Toe the longest, the inner and outer shorter, but equal to one another, and joyned to the middlemost by a Membrane from the divarication to the first joint. The interior edge of the middle Claw is serrate, as in *Herons*. The back-Toe (if it may be so called, standing like one of the fore-toes) is scarce a quarter of an inch long.

In the stomach it had some Seeds and Beetles. The Eggs were long, and white, but a little clouded and spotted with black.

It is a very beautiful bird for colour, more like to a *Cuckow* than an *Owl*; and it is easily distinguished from all other birds by the structure of its Bill and Feet.

In another bird of this kind, perchance differing only in Age or Sex, the three first or outmost great Wing-feathers had a large white spot in their interior Vanes, which in the third feather reached also to the exterior: The tips also of the two outmost feathers of the Tail were spotted with white. There was some shew of these spots of a pale yellowish colour in the first described.

It is found in the Mountainous Woods, especially in many places of *England*, as in *York-shire*, *Derby-shire*, *Shrop-shire*, &c.

§. II.

* *The American Goat-fucker, called Ibijau by the Brasilians, Noitibo by the Portugues. Marggrav.*

* The word in Latine in *Arantus*.

THIS is a small bird, of the bigness of a *Swallow*: Hath a broad flat Head: Great, lovely, black Eyes, with a black, shining Pupil, of an elliptical figure: Outwardly a circle or ring of yellowish white compasses the Eyes. It hath a very little Bill, not exceeding the thickness of the tooth of a * *Shrew-mouse*, and not so long: yet hath it patent Nostrils in the Bill: An exceeding wide Mouth, which when shut cannot be seen; but when she opens her Bill, appears slit up to the Eyes, so that it is almost an inch wide. It hath a very little Tongue: White Legs, and small for the bigness of the body, scarce half an inch long: Four Toes in the Feet, three standing forward, and one backward, armed with black, crooked Claws. Along the Claw of the middle Toe of each foot on the inside it hath as it were a fin, much jagged or toothed, so that the Claw seems feathered in a manner on the inside: But there are no feathers on it but a certain skinny rough matter. It hath a handom Tail, two inches long, which it can spread wide; to the end whereof the Wings reach. In all the lower part of the body the feathers are mixt white and black, as in a *Sparrow-Hawk*: In the Head, Back, Wings, and Tail they are black, white being interspered with a grateful variety; and something also of yellow mingled with the white: In a word, it is black, and speckled here and there with white.

There is also found another Species of this, of the same colour and make with this, but as big as an *Owl*. The mouth opened will easily admit a mans fist.

§. III.

* *Marggravius his Braslian Guira quera, approaching to the Goat-fucker, or Swift.*

IT is of the bigness of a *Lark*, but because it hath long Wings and a Tail much longer, it seems greater. It hath a broad, flat, and pretty great Head; great black Eyes: A small, triangular, compressed Bill, the upper Chap being hooked: A wide Mouth, much wider than the Bill, and which being opened represents a Triangle. At each end of the upper Mandible on both sides, for the length of an inch in either, it hath about ten or twelve thick bristles like Swines, stretched forth both forward and sideways. Its body is not long, but almost round. Each foot hath four Toes standing after the usual manner, the middle whereof is longer than the rest; and furnished with a Claw finely ferrate, or toothed like a Comb. All the Claws are black. It hath long Wings, viz. half a foot: The Tail eight inches long, having in the out-sides two feathers longer than the rest. The whole Bird is of a dusky ash-colour, with dark yellow or whitish spots intermingled after the manner of a *Sparrow-Hawk*. Round the Neck, behind the Head, it hath a ring of a dark golden colour. The Legs are cinereous or dusky. The Toes connected by a little skin, not so broad as in *Ducks*; for it is no water-fowl.

This latter Bird doth more resemble a *Swallow* than a *Goat-fucker*: The former also is not unlike the *Hirundo apus* or *Swift*. Indeed the *Goat-fucker* and *Swift* agree in many particulars, as the smallness of the Bill, the wideness of the Mouth, the shortness of the Legs, and situation of the Toes.

BOOK

BOOK I. PART I. SECT. III.

Of Frugivorous Hook-bill'd Birds or Parrots.

CHAP. I.

Of Parrots in general.

THE *Parrot* hath a great Head, a hard Beak and Skull. But why Nature gave it a hooked Bill, whereas it is rather a Frugivorous than a Carnivorous or Rapacious Bird, *Aldrovandus* gives this reason: Because for the weakness of the Feet, descending or climbing up boughs or grates, it could not commodiously sustain the weight of its body, were not the Bill of that crooked semicircular figure, that it can as it were with a hook or grapple catch hold of whatever is near. For the *Parrot* in climbing Walls or Trees first catches hold with her Bill, as it were with a Hook, then draws up her body, then fastens her Feet; then reaching up higher claps on her Beak again, and so puts forward her body and feet alternately.

The *Parrot* alone with the *Crocodile* moves the upper Jaw, as all other Animals do the lower. The Tongue is broad, which is common to it with other Rapacious birds, of the figure of a *Gourd-seed*, as *Scalliger* notes. Hence it is called in *Greek* *Ἀρσενύλαρος*, both because its Tongue resembles a mans, and also because it imitates humane speech. The Feet are of a singular fashion, for they have not three Toes standing forward and one backward, but two each way, like *Woodpeckers*. *Jo. Faber*, in his Expositions of *Nardi Antonio Recchi* his Animals found in *New Spain*, hath noted and observed concerning the Toes of *Parrots* something not mentioned by any Author, viz. That when they walk, climb up, or descend down the sides of their Cages, they stretch two of their Toes forward, and two backward; but when they take their meat, and bring it to their mouths, they make use of three Toes to hold it till they have eaten it up. Yea, (which may seem wonderful) they do so dexterously and nimbly turn the greater hind-toe forward and backward, that on sight of it you would confess your self not to know, whether it were given them by Nature to be used as a fore-toe in feeding, or a back-toe in walking. So that it seems in this respect they resemble *Owls*. It hath crooked Claws, wherewith it holds its meat like Rapacious birds, and brings it to its mouth, after the manner of men. For taking it in its Toes it lifts it up to its mouth, not turning the foot inward, but outward, after a fashion not only usual and ridiculous, but one would think also incommodious. It doth not only first of all with its Bill as it were with Teeth break or divide entire *Almonds*, but rolling them up and down within the Cavity of its Bill, doth as it were champ and chew them, softning them before it swallows them. *Parrots* while they are yet wild and at liberty do eat all sorts of grain and pulse. And this is peculiarly observed of them above other creatures, that as *Swallows* feed upon *Hellebore*, and *Starlings* upon *Henlock*, so do they upon the seed of * *Bastard Saffron* (which to man is a purgative) not only without receiving harm thereby; but growing fat with it. Moreover, they eat all sorts of fruits, as well such as are covered with a soft rind, as those with a hard shell, viz. Nuts, &c. and are greatly delighted in them.

* *Calicut or Caribbeas.*

They do not only imitate mans voice, but in wit excell all other birds, as *Aldrovandus* proves by many Histories and examples. I shall not think much to set down one very pleasant story, which *Gesner* saith was told him by a certain friend, of a *Parrot*, which fell out of King *Henry VIII.* his Palace at *Westminster* into the River of *Thames* that runs by, and then very seasonably remembering the words it had often heard some whether in danger or in jest use, cried out again, *A Boat, a Boat, for twenty pound*. A certain experienced Boatman made thither presently, took up the Bird, and restored it to the King, to whom he knew it belonged, hoping for as great a reward as the Bird had promised. The King agreed with the Boatman that he should have as the Bird being asked anew should say: And the Bird answers, *Give the Knave a Groat*.

They are very frequent in both *Indies*, as well *East* as *West*. They breed not in cold Countries; for they are impatient of cold, so that they can hardly bear our Winters,

Winters, unless they be kept in Stoves or hot places: And whereas in their own Country, to wit, the *Indies*, they are much upon the Wing, with us by reason of the inclemency and sharpness of the Air they grow torpid and unactive, and less fit for flight. They are said to be very long-lived.

They breed in hollow trees (witness *Marggravius*, *Lerius*, and *Piso*) where they make a round hole outwardly, and lay two or three Eggs, like to *Pigeons*, without any made Nest, as *Marggravius* saith: *Lerius* affirms, that they do build Nests sufficiently firm and hard, of a round orbicular figure. Whence it is manifest that they do not hang their Nests upon the slender twigs of Trees, as *Cadarnus* and others have delivered. For that bird which hangs its Nest on this fashion, called by the *Brazilians* *Guira tangeima*, as *Marggravius* writes, is much different from the *Parrot*. Though you touch her Eggs yet will not the *Parrot* forsake them, but hatch them notwithstanding. *Parrots* are made of several colours by the **Tupye*, by plucking them when they are young, and then staining their skins with divers colours. The *Portugues* call counterfeit *Parrots*. Which thing if it be true (for to me indeed it seems not probable) it is to no purpose to distinguish *Parrots* by the diversity of colour, sith therein they may vary infinitely.

In all *Parrots* that I have hitherto observed the Nostrils were round, situate in the upper part of the upper Chap, close by the feathers, and very near one to another.

Parrots in respect of bigness may be divided into three kinds, viz. the greatest, mean-sized, and least.

The greatest are equal in bigness to our common *Raven*: or (as *Aldrovandus* saith) to a well-fed *Capon*; and have long Tails: In *English* they are called *Macaos* and *Cockatoons*. The middle or mean-sized and most common *Parrots* are as big or bigger than a *Pigeon*, have short Tails, and are called in *English*, *Parrots* and *Poppinjays*. The least are of the bulk of a *Blackbird* or a *Lark*, have very long Tails, and are called in *English* *Parakeetos*.

CHAP. II.

Of the greatest sort of *Parrots* called *Maccaws* and *Cockatoons*.

§. I.

* *Aldrovandus* his greatest blue and yellow *Maccaw*.

THE body of this equals a well-fed *Capon*. From the tip of the Bill to the end of the Tail it was two Cubits long. The Bill hooked, and in that measure that it made an exact semicircle, being outwardly conformed into the perfect roundness of half a ring, a full Palm long; and where it begins as thick within half an inch, if you measure both Mandibles. The upper Mandible is almost two inches longer than the nether, which on the lower side downward is convex and round. The whole Bill is black. The Eyes white and black. Three black lines drawn from the Bill to the beginning of the Neck, representing the figure of the letter S lying, compass the eyes underneath. The Crown of the Head is flat, and of a green colour. The Throat adorned with a kind of black ring. The Breast, Belly, Thighs, Rump, and Tail underneath all of a Saffron colour. The Neck above, Back, Wings, and upper side of the Tail of a very pleasant blue or azure. The Tail eighteen inches long more or less. The Legs very short, thick, and of a dusky or dark colour, as are also the Feet, the Toes long, armed with great, crooked black Talons.

§. II.

§. II.

* The other *Maccaw* or *Macao*, of *Aldrovandus*.

THIS is nothing less than the foregoing, of the same length, but seemed not to be so thick-bodied. Its Bill is shorter than the precedents, being not drawn out into so long a hook, yet almost three inches long; and as many broad, where it is joined to the head; the upper Chap being white, the nether black. The region of the Eyes and the Temples are white. The crown of the Head more than a Palm long and flat. The Back, beginning of the Wings, Throat, Breast, Belly, Thighs, and finally the whole Tail above, are beautified with a most lovely *Scarlet or red colour, *The Latine word is *Pardus* as is also the inner side of the flag-feathers of the Wings. The second row of the covert Wing-feathers are yellow with scarlet edges, each adorned with a kind of eye of blue near the tip. The outer surface of the flag-feathers and the Rump [I suppose he means the Tail] underneath tinged with a deep blue. The Legs are short, the Feet divided into long Toes, armed with crooked Claws: Both of a dusky or dark ash-colour.

§. III.

A *Maccaw* described at London, the same I suppose with the precedent, called by *Marggrav.* *Araracanga*.

AT London we observed and described a certain *Macao*, either the same with the precedent (I mean in kind) or very like it. It was of the same bigness, had a huge Bill, the upper Mandible being almost wholly white, the lower black. The skin about the Eyes was bare of feathers, and rough or rugged. The whole head, Breast, and Belly red [like *minium*]: The Wings and Tail parti-coloured of red, yellow, and blue. The Tail of a great length, especially the two middlemost feathers, which do much exceed the rest, and are of a blue colour.

I take that which *Marggravius* describes *Book 5. Chap. 9.* to be the same with this. Let the Reader compare the descriptions: His runs thus. It is bigger than our common *Raven*: Hath a great Head, broad and flat above; fair *grey Eyes [**Cassus*] with a black Pupil. A white Membrane encompasses the Eyes, as also the Jaws and lower Bill: [I suppose he means, that the skin thereabouts is white and bare of feathers:] This under the Eyes is produced in a femilinear form: The Bill is great, hooked, white above, black underneath. It hath a Tongue like a *Parrot*, and eats after the same manner. It learns also to pronounce some words. The upper Chap of the Bill is about three inches long, broad or deep. It hath black Legs and Feet like a *Parrot*. The whole Head, Neck, Breast, Belly, Thighs, and Tail underneath, as also the beginning of the Wings above are clothed with most lovely and elegant red feathers: The middle part of the Wings is adorned with green, and the lower half of them from the middle to the end with blue. The Rump or lower part of the Back, and the Tail are blue, some brown feathers being also intermingled. The Tail is about ten inches long, running out much beyond the ends of the Wings.

§. IV.

* The *Macao* called *Ararauna* by the *Brazilians*, *Marggrav.* the same with *Aldrov.* his first.

IT is in shape like the precedent, but of a different colour. Its Bill black; Eyes grey, Pupil black. The skin about the Eyes white, variegated with black, as if it were wrought with a Needle. The Legs and Feet dusky [*fulca*]. The forepart of the Head above the Bill hath a copple or tuft of green feathers. Under the lower Bill black feathers compass the Throat. The sides of the Neck, the whole Breast and lower Belly are covered with yellow feathers: The hinder or extreme part of the Head, the backside of the Neck, the whole Back and outides of the Wings with blue. The ends of the Wings have yellow feathers mingled with the blue. The Tail consists of long blue feathers, wherewith some yellow ones are mingled. The inner or under side of all the blue feathers in general is black: These feathers do also cast a shew of blackness from their sides.

Upon

Upon comparing the descriptions I find, that this is the very same bird with *Aldrovandus* his first *Macao*.

§. V.

* *The former Braslian Maracana of Marggrav.*

This is a Bird altogether like a *Parrot* (of which also it is a Species) but bigger. All its feathers of a bluish grey. It cries like a *Parrot*. It loves fruit, especially *Murruja*.

§. VI.

* *The other Maracana of Marggrav.*

This is also a sort of *Arara* [he means by this word a *Maccam*, for so it seems the *Brasilians* call *Maccams*] but lesser, about the bigness of a *Parrot*. It is of the shape of a *Maccam*, [*Arara*] hath such a long Tail, a like Bill and skin about the Eyes. The Bill is black; the skin about the Eyes white and speckled with black feathers: The Eyes yellowish, the Pupil black. The whole Head, Neck, and Wings are of a deep green as in *Amurucica*: The top of the Head is more dilute, and in a manner inclining to blue. The Tail consists of feathers above green, underneath of a deep red, having their ends blue. The Wings likewise are read on the inside, green on the outside, having their ends blue. At the rise of each Wing it hath a red spot. At the rise of the Bill above it hath a dusky spot. The Legs and Feet are dusky. It cries *Oe, Oe, Oe*.

CHAP. III.

Of middle-sized Parrots, properly called Parrots and Poppinjays.

§. I.

* *The white crested Parrot of Aldrovandus.*

It was about thirteen inches long, as big as an ordinary young Pullet, or the greatest sort of tame Pigeon. *N. B.* I here measure the length from the tip of the Bill to the end of the Wings, for measuring to the end of the Tail it is about eighteen inches. Its Tail contrary to the manner of other *Parrots*, is not stretched out directly backwards in length, but erected after the fashion of the common *Dunghill-Cock* and Hens. It hath an ash-coloured Bill, inclining to black, having wide open Nostrils near the Head, and rising up, with a round ridge or bunch between them. The Tongue is broad and red: The *Irides* of the Eyes yellow, the Pupil black. The whole body clothed with white feathers. The crown of the Head is adorned with fair feathers, a handful and half high, bending somewhat backward, ending in sharp points again reflected forwards, ten in number, as it were a crest. The Tail in like manner is erected on high, consisting of a great many white feathers, nine inches long, such as are seen in the Tails of *Dunghill-Cocks*. The Legs and Feet are yellowish: The Claws small, scarce hooked and black.

§. II.

The most common green Parrot having the ridge of the Wing red. Aldrov.

This is nothing less, if not bigger, than the white crested *Parrot*, almost fifteen inches long, of the bulk of the greatest tame Pigeon or a Pullet of the first year. [With us they are not ordinarily so big.] The upper Chap of the Bill is black at the point, then bluish, the remainder being red; the lower Chap white: The *Iris* of the Eye of a Saffron colour, or rather red, the Pupil black: The crown of the Head yellow: All the rest of the body is green, the under side more dilute and yellowish; the Back and Wings darker, and the greatest and outmost Pinion feather inclining somewhat to blue. Only the uppermost ridge of the Wings is red; as

as also the Tail, which is but short: In the lower part on each side it is marked with a long, red spot, but above it is yellow. The Legs and Feet are ash-coloured: The Claws black, and not much hooked.

This kind is the most common of all with us. In those I described at London there was a white circle about the Eyes: and the upper Chap of the Bill had on each side a tooth-like process or Appendix, to which answered a dent or nick in the lower.

§. III.

* *Aldrovandus his Parrot with a particoloured Bill.*

From the tip of the Bill to the end of the Tail it was eighteen inches long. The upper Chap in the upper part was of a bluish green, of a yellow Oker colour in the sides; the tip crossed with a white spot: The lower Chap of the Bill of a lead-colour round about, and yellow in the middle, the crown of the Head adorned with yellow or golden feathers. The rest of the body was for the most part green, the Back darker, the Belly and Breast lighter, with a gloss of yellow, the roots or bottoms of the feathers being every where cinereous. The flag-feathers on their outer webs toward the belly were first green, then by little and little growing blue, terminate in a purplish colour, being elsewhere black. The second row of Wing-feathers were wholly yellow. Those which grew about the middle of the Wings, at their beginning, on the outer web, which respects the belly, were first green, then of a dark red, then green again, and lastly at their tips partly of a violet colour, partly black, with so great variety. The Tail is composed of twelve feathers, of which four on each side at their rise or beginning are first green on the exterior web, yellow on the interior, then of a red or Scarlet colour, thirdly green again, and lastly yellow. The four remaining middle feathers are wholly or all over green, only at their very ends shew something of yellow. The Feet are of a lead-colour, having four toes, two standing forward, and two backwards, as in *Woodpeckers*; the interior being much shorter than the exterior. The Claws crooked as in Rapacious birds. The Legs not above an inch long, but pretty thick.

§. IV.

* *The black-billed green Parrot of Aldrovandus.*

This is thirteen inches long, hath a great, thick Bill, like the rest, but wholly black. At the beginning of the Bill, on the Crown, and under the Throat it is of a blue colour, tending to green. The *Iris* of the Eye is of a dark Saffron, the Pupil black: The rest of the Head and the Breast yellow: The Belly of a middle colour between yellow and green; as also the upper side of the Tail. The Neck and all the Back with the Wings are of a deep green: So that it would be almost wholly green, but that the very extreme ridge of the Wing, where it is joined to the body, is of a Scarlet red; and then follows a black feather in the outside or extremity of the Wings which respect the belly, and lastly the tips of the flag-feathers are red. Besides these also the lower part of the Rump is tintured with a Scarlet red. The Feet are dusky: The Talons black, and somewhat crooked. The Tail is about a Palm long more or less.

§. V.

* *The white-headed Parrot of Aldrovandus.*

It is ten inches long: The Bill white, and two inches thick: That part of the Head next to the Bill is also white: The Pupil of the Eye black, the *Iris* ferruginous. The forehead and crown of the head are white, variegated with black spots. The hinder part of the Head, Neck, Back, Wings, and Rump above are tintured with a dark green: The Throat and uppermost ridge of the Wings with a Vermilion red. The Breast and Thighs again are green. The part of the Belly lying between the Thighs and the Breast is of a dusky colour obscurely red, or of that the Painters call *Umber* [*terre Umbrie*.] Some of the covert-feathers of the Wings, viz. the outmost, are blue, but with some mixture of white. The lower part of the belly next

the Rump yellow. The Tail is red in the middle; the sides being variegated with red, yellow, and blue. Almost all the feathers have their utmost tips black, but else are green: The Legs and Feet cinereous. This Bird from the great variety of its colours might well be called the particoloured or many-coloured [*ποικιλῶν*] Parrot; it being of no less than seven several colours, of which yet the chief is green.

Mr. Willughby doth thus briefly describe either this same Parrot, or one very like it. It is of a green colour, lesser than a Pigeon: The Irides of the Eyes of a Hazel colour. The Bill is white: From the Bill to the middle of the crown it is also white. Under the Eyes and the under Chap it is of a Vermilion colour. The middle of the Breast and Belly between the Legs is reddish. The outer webs of the Tail-feathers to the shaft are of a flame-colour. Towards the crown of the Head the edges of all the feathers are dark or blackish. The outmost flag-feathers are bluish. The exterior border of the Tail-end is bluish. A dark spot covers the Ears. The lower part of the Belly is of a yellowish green.

φ. VI.

* The red and blue Parrot of Aldrovandus.

THIS bird is nine inches long, sufficiently corpulent. The Bill not so great as in the precedent, blackish: The Head, Neck, and Breast are blue: The top of the crown remarkable for a yellow spot. The region of the Eyes white; the Pupil black; the Iris dusky. The sides of the Belly under the tips of the Wings yellow: The Belly green. The Thighs white, with a shadow of green. The Rump yellow. The top of the back of a pale blue. The covert feathers of the Wings particoloured of green, yellow, and rose. The end of the back or region of the loins yellowish. The Legs and Feet are ash-coloured, the rest of the body is of a rose-colour or bluish.

§. VII.

Aldrovandus his ash-coloured or bluish Parrot.

THIS according to Aldrovandus is ten inches long: Of the bigness of a tame Pigeon, or the common green Parrot. The Bill is black: The Nostrils near to one another, in the upper part of the Bill next to the Head; which part is covered with a naked white skin [we afterwards observed the same figure and situation of the Nostrils in all other Parrots.] The whole body is of an uniform colour, viz. a dark cinereous: Yet the lower part of the Back and Belly and the Rump are paler than the rest of the body, and almost white. The Tail is red of a Vermilion colour, very short, and scarce reaching further than the ends of the Wings. The region of the Eyes [sides of the head round the Eyes] is white and bare of feathers. The feathers of the Head and Neck are shorter than the others. They say that all of this kind are brought from Mina, an Indian City of St. George. We have seen many of them at London.

§. VIII.

* The red and white Parrot of Aldrovandus.

IT is equal to an indifferent great Capon, seventeen inches long. The Head and Neck thick. The whole body white, but moderately shaded with dusky, so that it seems to be ash-coloured. Its Bill is black, the hooked part being longer than in others. The hinder part of the Back, the Rump, the whole Tail, and prime feathers of the Wings are of a Scarlet colour [*Miniacco colore*.] The Feet, as in others, blackish. In bigness of body it gives not place to that greatest sort which are less vocal, called *Maccams*: In this only it is inferior to them, that it hath a shorter Tail: For which cause, notwithstanding its magnitude, we have placed it in this *Classis* or rank.

§. IV.

§. IX.

* Marggravius his middle-sized Parrots.

THE first Species called AJURUCURAU is a very elegant bird. Above the Bill on the head it hath a tuft or cop of a lovely blue. The throat, sides, and upper part of the Head are clothed with feathers of a delicate yellow: The whole body of pleasant green. In brief, it is elegantly variegated. The Tail is green, but when it spreads it appears edged or fringed with black, red, and blue. The Legs and Feet of an ash-colour: The Bill more dusky: The Eyes black, with a golden circle about the Pupil. The Tongue of all is broad and thick.

The second Species is like to the former, a little differing in the variegation of the colours, viz. On the top of the Head it hath a yellow cop, wherewith white is mingled. Above the Eyes, and under the Throat it is of a clear or bright yellow. About the upper Bill is a Sea-green spot.

The third Species called AJURUCURUCA hath a tuft on its Head of a colour mingled of blue and a little black; and in the middle of the tuft a yellow spot. Below the Eyes is a yellow, and on the Throat a blue spot. The Breast is green, as are also the Wings and Back, but somewhat deeper or darker, the ends of the Wings and the Tail again being more dilute: the tips of the Wing-feathers are yellow and red, mingled with blue. The Tail underneath is particoloured of green and yellow, above of a pale green. The Legs of a bluish ash-colour. The Bill above cinereous, in the extremities black. The Claws black.

PARAGUA is a black Parrot of the bigness of *Ajurucarin*: The Breast, Back, and anterior half of the belly remarkably red: The Eyes black, encompassed with a red circle or Iris: The Bill dusky, or of a dark ash-colour.

THE TABABE of the *Brazilians* is a green Parrot bigger than a *Paragua*, with a red Head and Breast, of which colour is also the beginning of the Wings. The Beak and Feet are of a dark ash-colour.

AJURUCATINGA of the *Brazilians* is a Parrot of the bigness of a handsome Pullet: All green, with red Eyes, and the skin about the Eyes white: The Bill and Legs white. It hath a long green Tail. This in colour and length of the tail agrees with the *Parakeet*, but differs from it in bigness.

AJURUPARA agrees in all respects with the precedent, only it is less.

CHAP. IV.

Of the lesser sort of Parrots, called Parrakeets.

φ. I.

* The Ring-Parrakeet or Phittacus of the Ancients, Aldrov.

THIS was the first of all the Parrots brought out of India into Europe; and the only one known to the Ancients for a long time, to wit, from the time of Alexander the Great to the Age of Nero, by whose searchers (as Pliny witnesseth) Parrots were discovered elsewhere, viz. in Gageade an Island of Ethiopia. It is fourteen inches long; hath a thick Bill, all over red: A yellow Iris or circle encompasseth the Pupil of the Eye, which is, as in most birds, black. The head and all the body besides is green; but the neck, breast, and whole under side more dilute or pale: the upper side deeper-coloured. From the lower Chap of the Bill under the Chin a black line is drawn downward as far as the beginning of the Breast, which then divides, and goes away to each side of the neck, till it meet with that red circle or ring, which compasseth the backside of the Neck. This ring is behind of the breadth of ones little finger, but grows narrower by degrees towards the sides. The belly is of so faint a green, that it seems almost to be yellow. The outmost feathers of the Wings next the belly are of a dark dusky green about the middle, in the upper part distinguished with a red mark. The Tail, which is about two Palms long, is also of a yellowish green: The Legs and Feet ash-coloured. Whence Solinus doth not

Q.2 rightly

rightly affirm, that it hath no difference of colour but only the ring of red about the Neck: Nor *Apuleius*, that the out-sides of the feet are red, [*extimas palmulas rubere*] they being cinereous: Unless we can think they described another bird of this sort.

§. II.

* *The wholly green Parakeet of Aldrovandus.*

* Perchance
he means the
point.

THIS is of equal length with the former, but less-bodied; being not bigger than a *Throftle* or *Mavis*. The Bill is red, especially the upper part; for the * edges [*acies*] and lower part are blackish: the Pupil of the Eyes black, the *Irides* of a red and Saffron colour. The rest of the body is of a pleasant grass-green, yet the belly more pale, the master-feathers of the Wings of a deeper colour. The Tail narrow, ending almost in a point, near nine inches long. The Feet and Legs of a different colour from all other Parrots, *viz.* a red or * carneau. This is peculiarly by a distinct name called *Scinciale* in *Hispaniola* an Island of *America*, where it is found. The *Italians* for its small stature and bulk call it *Parochino*, and the *Frenchmen* (as *Bellonius* saith) *Perruquet*.

* Flesh-colour.

The red and yellow or pale green *Parakeet* of *Aldrovandus* described by the Picture thereof sent with many others out of *Japan* to Pope I suspect to be fictitious, at least in many particulars, as are doubtless the rest of those Pictures, therefore I have omitted it, referring the Reader, who desires further knowledge of it, to *Aldrovandus*.

§. III.

* *The crested red and green Parrot of Aldrovandus.*

THE Wings, Tail, and Crest of this bird were red, the rest of the body green. Its Crest resembled that of the crested *Parrot* above described. It had very fair Eyes, with a black Pupil and red *Iris*. The Crest consisted of six feathers, three greater, and as many less.

§. IV.

* *Margravius his Parakeets, called by the Brasilians Tui.*

THE first Species is of the bigness of a *Swallow*: all over green: Having a very long long Tail, and a black hooked bill. This may be the second sort.

The second Species, called *TUIAPUTEJUBA*, is also all over green; the Wings darker, the rest of the body paler, save the belly, which is yellowish: The Tail is very long. The Bird is of the same bigness with the former: Hath great, blackish Eyes: A circle of yellow feathers about the Eyes, and above the Bill, which is black and hooked. On the head it hath a great spot of orange-coloured feathers.

The third, called *TUITIRICA*, is somewhat bigger than those of *Guiny*, of a green colour all over, which for the most part is deeper in the Back and Wings, paler in the other parts: The Bill crooked, of a Carnation colour: The Eyes black, the Feet bluish. The Tail reaches a little beyond the ends of the Wings. These become very tame, so that they will take meat out of ones mouth, and permit one to stroke and handle them. They learn also to talk like *Parrots*.

The fourth is of the bigness of a *Stare*, of the same colour with the second Species, but having a shorter Tail.

The fifth, called *JENDAYA*, is of the bigness of a *Blackbird* or *Throftle*, hath a black Bill and Legs; black Eyes, with a golden *Iris* or circle encompassing the Pupil, outwardly white. The Back, Wings, and Tail, as also the lower belly are covered with green feathers, with which a Sea-colour is mingled. The * extremity of the Wings is in a manner black. The whole Head, Neck and Breast are of a yellow colour, partly deeper, and partly paler.

* I cannot say
whether he
means the
end, or out-
side.

The sixth, called *TUIETE*, is of the bigness of a *Lark*: The whole body of a light green: But the beginning of the Wings of a bright blue. The borders also of all the feathers of the Wings are blue, so that when they are closed, these borders altogether

together make an appearance of a long green stroke near the out-sides of the Wings. In the back also at the rife of the Tail there is a blue spot. The Tail is short: the Bill hooked, of a Carnation colour. The Legs and Feet cinereous.

The seventh, called *TUIPARA* by the *Tupinambi*, is also of the bigness of a *Lark*, and all over of a pale green. The Tail shorter, so that it ends with the Wings [being equally extended.] The Bill of a Carnation colour, the Legs grey or griled. Near the rife of the Bill, in the forehead it hath a Scarlet spot of a semilunar figure, as it were a Crown. [The following words corrupted, I suppose, by the error of the Transcribers or Printers, not understanding, I have omitted.] They build in Ant-heaps left by the Ants, which are found in trees.

ANACA of the *Brasilians*, is again of the bigness of a *Lark*. Its Bill dusky and hooked. The feathers on the top of the head are of a Liver-colour: On the sides of the Head about the Eyes of a brown. The Throat is ash-coloured: the Neck above and the sides green. The Belly hath reddish brown feathers. The back is green, and hath a spot of a light brown. The Tail is also of a dilute brown. In the beginning of the Wings is a crimson spot or border: The rest of the Wings green; the ends only of a Sea-water colour. The Legs above covered with green feathers, below bare, and of an ash-colour, having black Claws. In fine it is a very elegant bird.

QUIJUBA TUI is all yellow, of the bigness of *Tuiapara*: with a hooked grey Bill, and black Eyes. The end of the Wings is of a dark green: The Tail long and yellow. It easily becomes very tame.

§. V.

The Scarlet Parakeeto with green and black Wings.

IT is bigger than a *Blackbird*: The whole body of a Scarlet colour: The covert feathers of the Wings green; the prime feathers black; having their exterior webs green above, and of a Crimson colour underneath. The ridges of the Wings yellow. The Tail a Palm long, consisting of twelve feathers, whose lower halves are red, the upper being green or yellow. The Bill yellow, very much hooked, hanging down half an inch. The *Irides* of the Eyes yellow: The skin of the sides of the Head round the Eyes is bare, and of an ash-colour. The Legs very short and black. A ring of green feathers compasses the legs above the knees. We saw this at *London* in the shop of a certain trades-man, who told us that it was brought out of the *East-Indies*.

CHAP. V.

* *Clusius his Discourse and Account of Parrots.*

THE Noble *Philip Marnixius* of *St. Aldegonde* had a *Parrot*, whom I have oft heard laugh like a man, when he was by the by-standers bidden so to do in the *French Tongue*, in these words: *Riez, Perroquet, riez*; that is, *Laugh, Parrot, laugh*. Yea, which was more wonderful, it would presently add in the *French Tongue*, as if it had been endued with reason, but doubtless so taught, *O le grand sot, qui me fait rire*; that is, *O great fool, who makes me laugh*: And was wont to repeat those words twice or thrice. But among others I saw one of those great ones in the house of the illustrious Lady, *Mary of Bremen*, Dutchess of *Gray* and *Archebot*, of happy memory, before she went out of *Holland*, the like whereto for variety and elegance of colours, I do not remember to have ever seen. For though almost all the feathers covering the body were red, yet the feathers of the Tail (which were very long) were partly red, and partly blue; but those on the Back and Wings parti-coloured of yellow, red, and green, with a mixture also of blue. Its Head about the Eyes was white and varied with waved black lines, like the Head of the *Canada*. I do not remember the like *Parrot* described in any Author. Moreover, this Bird was so in love with *Anna* the Dutchess's Niece, now Countess of *Meghen*, and * *Baronsse of Grassebeke*, that where ever she walked about the Room it would follow her; and if it saw any one touch her cloaths, would strike at him with its Bill; so that it seemed to be possessed with a spirit of jealousy. That *Parrot* of the greater kind, called

* The Ladine
word is *Dama*,
Lady.

called by the *Brasilians* *Arat*, as *Lerius* writes, must needs also be a very handsome one. For he saith, that the prime feathers of the Wings and Tail (which are a foot and half long) are half Scarlet-coloured, half of an elegant blue; the shaft or Nerve which cuts the feather through the middle long-ways distinguishing those colours [that is, each feather being on one side the shaft blue, on the other side red] but that the rest of the feathers of the whole body are altogether blue. He adds, that both those sorts of greater *Parrots*, viz. *Arat* and *Canide*, were in great esteem among the *Brasilians*, because they plucked their feathers three or four times a year, to make Clothes, Caps, Bucklers, and Curtains: And though they are not kept tame, yet are they wont more to frequent and abide in great trees in the middle of the Villages than in Woods. Besides, those two huge ones, the same *Lerius* reports, that there are found three or four sorts of *Parrots* among the *Brasilians*. The first, of those great and thick-bodied ones, which the *Tououpinamboutis*, a people of *Brasil*, call *Acurons*, having its head adorned with feathers particoloured of yellow, red, and violet, the ends of the Wings of a lovely red, and the feathers of the Tail long and yellow; the rest of the body being wholly green: That this kind is seldom transported into foreign Countries; and yet there is none that may more easily and perfectly be taught to speak. He adds further, that a certain *Braslian* woman, living in a Village two miles distant from the Island, in which he with other *Frenchmen* dwelt, had a *Parrot* of this kind, which she made much of; which seemed to be endued with that understanding and reason, that it could discern and comprehend whatever she said who brought it up. For, saith he, walking forth sometimes to refresh our selves as far as that Village, when we passed by that woman's house, she was wont to call upon us in these words, *Will you give me a Comb, or a Looking-glass, and I will presently make my Parrot sing and dance before you?* If we agreed to her request, as soon as she had pronounced some words to the Bird, it began not only to leap upon the Perch on which it stood, but also to talk and whistle, and imitate the shoutings and exclamations of the *Brasilians*, when they prepare themselves for the battle. In brief when it came into its Dames mind to bid it sing, it sang, to bid it leap, it leapt: But if taking it ill, that she had not obtained what she asked, she said to the bird *Auge*, that is, be still or silent: It stood still, and held its peace; neither could we by any means provoke it to move either foot or tongue. The second kind is called by the *Brasilians* *Marganas*, and is like those *Parrots* that are wont to be brought into *Europe*; of no great account among them, by reason of their multitude or abundance, they being not less frequent there, than *Pigeons* with us. The third sort of *Parrots*, called by them *Tovis*, are not greater than a *Starling*, and have their whole body covered with feathers of a deep green: But the feathers of the Tail (which are very long) have a mixture of yellow. He added further, that he had observed, that the *Parrots* of that Country did not build Nests hanging down on the boughs or twigs of trees, as some by their Topographical Tables would persuade us; but in the hollows of trees, of an orbicular figure, sufficiently hard and firm. Then *Chusius* tells us that he saw *Parrots* brought from *Fernambuco* of the *Brasilians*, not exceeding the bigness of a *Star*, covered with feathers wholly of a green colour, but all having a short Tail, and white Bill: and they who brought them over reported, that this kind was very noxious to fruit: That they fed them by the way with grains of *Maize*, that is, *Indian Wheat*. In the second Voyage the *Hollanders* made into the *East Indies*, in *Java* and certain neighbouring Islands, they observed *Parrots* far more elegant than those they were wont to bring out of *Brasil*, and they understood that they were called *Noyas* by the *Portugues* that frequented *Java* and the *Moluccas*: That they were not very big-bodied, but of so elegant a colour, that they thought more beautiful could not be painted by the hand of Man. For the Breast and Belly were covered with feathers of a florid, shining red colour; the Back with golden-coloured Plumes; the Wings adorned with feathers particoloured of green and blue: Underneath the Wings the feathers were of a lovely shining red. But that the price of those birds there was very great; so that they were not rated at less than eight or ten *German Dollars*. *Linscolius* writes, that the *Portugues* had often made trial to bring over of them to *Lisbon*, but could never effect it, because they were too tender and delicate. But the *Hollanders* with a great deal of care and industry brought one alive as far as *Amsterdam*, which though it were not of the choicest, yet might have been sold for one hundred and seventy *Florens* or *Gilders* of that Province, that is somewhat more than seventy *Dollars*, as I find recorded in the Diary of that Voyage. That bird by the way had learned to pronounce many *Holland* words, which it had heard of the Mariners, and its Master had made it

so tame, that it would put its Bill into his Mouth and Ears without doing him any harm, and would put in order the hairs of his beard if discomposed: And if any one else offered to touch him, it would presently snap or peck at him, as if it had been some Dog. Furthermore (saith he) in the year of Christ 1605. *Jacob Plateau* sent me the figure of a certain *Parrot*, drawn to the life in colours, the like whereof seeing I have not as yet seen, nor remember to have met with any where described, I thought fit to subjoin the figure of it Printed, in this *Avicenna* to my History of Exotics. He wrote that he had kept it above two years, that it was of the bigness of a *Pigeon*: That it had a Head almost like a *Hawk*, to wit, covered with such coloured feathers: Sparkling Eyes. The Neck and Breast were beset with particoloured feathers; which when it was angry, or any one molested it, by bringing any Animal near to the Cage in which it was shut up, it would set an end, so that it seemed to be in a manner crested. Those feathers were of a reddish colour, and in the outward part, [I suppose he means round the borders or edges] of a most elegant blue. The feathers of the Belly were almost of like colour, yet moreover clouded with dusky. The feathers of the Back were green, and the master-feathers of the Wings bluish. The Tail was composed of many green feathers, but not long. I could not neglect to propose to the Readers view a small sort of *Parrot*, brought thence last years from *Aethiopia* and the places bordering on *Mamongo*, by the *Holland* Skippers, with the figure of the Male, (but the Female is much more elegant; for there was one brought of both Sexes.) The bulk of the body was equal in bigness to a *Chaffinch*: That is, was two inches and an half long from the bottom of the Neck to the Rump. All the feathers covering the body were of a green colour; among which yet there appeared a manifest difference: For those on the Back were deeper coloured; those on the Belly paler. The flag-feathers of the Wings were three inches long; and though on the upper side, on that side the shaft which hath the shorter *Villi*, as far as they cover one another, they were tinged with a deep green; yet on the other side which hath longer *Villi*, and on all the under-side they were dusky or brown. The feathers of the Tail were most elegant, well nigh two inches long, little less than half an inch broad, on that part next the Rump of a green colour mingled with yellow, next of an elegant red, then of a black, and last of all of a green. And these three last colours were distinct from one another, as is to be seen in the Tail-feathers of some green *Parrots*, of the great kind [called *Maccaws*.] But these feathers are scarcely seen unless when she spreads her Tail, because they are covered with others of the same length, which are wholly green. The Neck is short and thick: The feathers covering the Head very short and green; except those on the crown above the Bill, and on the whole throat, for they are of a lovely florid red colour. I speak of the Male, for the feathers of the Female were of a paler red, and did not take up so large a space as in the Male. The Eyes were very black, the Bill thick and strong; the upper Chap hooked and sharp-pointed, as in other sorts of *Parrots*: Its colour reddish. The Legs short, scarce attaining the length of half an inch, covered with ash-coloured scales, as the feet of other common *Parrots*, and those divided into four Toes; of which two stood forward, and were of unequal length, two backward, and they also unequal: The shorter, which were the inner, having two joints, the longer; which were the outer, three. The Claws were white, and of a good length. I observed it to have a very small voice, and only to peep like a Chicken. It delights in company. When it eats, it doth not hold its meat in one foot, like other *Parrots*, but picks up its meat with its Bill by jobbing: But its meat for the most part is *Canary seed*; for I observed it to feed more willingly upon that than any other kind of Seed. I saw some that were so taught that they would pick up crumbs of bread dipt or moistened with water. Its drink is water. I observed further in this bird, that the Females, when they grew old, would scarce eat any meat, but what had been picked up by the Male, and kept a while in his Crop, and there mollified or macerated; the which they received with their Bills, as young *Pigeons* are wont to be fed and nourished by the old ones.

§. VII.

* Bontius his *small Parakeet*.

IT is of the bigness of a *Lark*, hath a hooked Bill, grey of colour, as is also the throat; black Eyes, encompassed with a silver circle [I suppose he means the *Iris*.] The Tongue is like a *Parrot* with solid ligaments. It can set up specious feathers on the crown of its Head like a Crest. Its Legs and Feet are of an ash-colour. It hath a very long Tail, reaching about ten inches beyond the ends of the Wings. Both the Belly underneath, and also the Head, Neck, and Tail above are of a beautiful red colour: But the Breast and lower feathers of the Tail are of a pale rose-colour, which [Tail-feathers] end in a lovely blue, or colour mingled of white and green. The Wings are chiefly green, but interwoven with red feathers, the one half whereof is so variegated on each side with yellow and rose colour, that exposed to the Sun it represents a thousand varieties of shining colours, and can hardly be expressed by a Painter: So that this bird deserves to be highly prized by great persons.

These *Parrots* are found chiefly in the midland Countries: They roost and build on the highest trees. They fly in companies, and with a great noise, as doth the whole tribe of *Parrots*. They are also garrulous, and learn to pronounce some words if they be kept tame.

§. VIII.

* Marggravius his *Brazilian Ani of kin to the Parrots*.

THIS Bird is of the bigness of a *Throfile* or *Mavis*, wholly black, Wings, Bill, Eyes, and Feet. It hath a long, erect Tail, of six inches length. Its Bill is high, broad, an inch long or something more; the lower part almost straight, the upper high, broad, of a femilunar figure and compressed, so that above it is almost edged. The Legs and Feet slender. It hath four Toes, two standing forwards, two backwards, after the manner of *Parrots*. It cries with a loud voice, in one tone yyyyy, in the middle more elevated. They are frequent in all Woods, but not good to eat.

THE

THE
SECOND PART
OF THE
FIRST BOOK.

Of Birds with straighter or less hooked Bills.

THE FIRST SECTION.

OF GREATER BIRDS.

CHAP. I.

Birds with thick, straight, and large Bills.

THESE either feed indifferently upon Insects and Fruit, some of them also are carnivorous and rapacious, being very greedy of dead Carcasses and Carrion; or upon Insects only. The first may be divided into such whose body is for the most part of one colour, and that black, which we call the *Crow-kind*: Or such whose body is particoloured, and who chatter much, viz. the *Pie-kind*. Of those which feed upon Insects only there is but one family, to wit, *Wood-peckers*. Yet the Reader is to take notice, that when we affirm *Woodpeckers* to feed only upon Insects, we understand *Woodpeckers* properly and strictly so called: For there are some birds which we have referred to this *Genus* of *Woodpeckers* largely taken, which feed also upon fruit, as for example, the *Nuthatch*, *Wall-creeper*, &c.

CHAP. II.

Birds of the Crow-kind.

§. I.

The Raven, called in Latine Corvus, in Greek Κόρως.

THE Bird we described weighed two pounds and two ounces: Its length from the tip of the Bill to the end of the Tail was two feet and one inch. The distance between the extremities of the Wings extended was four feet and half an inch. The Bill long, thick, sharp, and very black: The upper Chap something hooked, but not so as in *Hawks*, the lower straight: The Tongue broad, cleft at the tip, rough, and black underneath. The *Iris* of the Eye or ring encircling the Pupil consists as it were of a double circle, the exterior being of a light cinereous or ash-colour, the interior of a dark cinereous. Black hairs or bristles bending from the Head downwards cover the Nostrils. The Plumage is black all over the body, having a blue splendour or gloss; which is seen especially in the Tail and Wings. The Belly is something paler, inclining to brown. On the middle of the Back grow only downy feathers: For the Back is covered with those long feathers that spring from the shoulders, as in many other birds. The number of prime feathers in each Wing is twenty, of which the first is shorter than the second, the second than the third, and that than the fourth, which is the longest of all. In all from the sixth to the eighteenth the shaft extends further than the Vane, and ends in a sharp point.

R

The

The Tail is about nine inches long, made up of twelve feathers, the exterior being gradually somewhat shorter than the interior.

The Claws and Toes, It hath large crooked Claws, especially those of the back-toes. The outmost fore-toe is joyned to the middlemost from the divarication to the first joynit.

Entrails. The Liver is divided into two Lobes. It hath a large Gall sticking to the Guts. The length of the Guts is forty three inches; of the blind-guts one inch.

Its Food. The Gullet below the Bill is dilated into a kind of bag, wherein she brings meat to feed her Young. The stomach with it is wrinkled. The Raven feeds not only upon Fruits and Insects, but also upon the Carcasses of beasts, birds, and fishes; moreover, it sets upon, kills, and devours living birds, after the manner of Hawks.

White Ravens. We have seen one or two milk-white Ravens: *Aldrovandus* mentions divers; and saith that they are often found in England: But without doubt he was mistaken or misinformed; for they are seldom seen among us; inasmuch that they are carried up and down to be shewn for money. I rather think, that they are found in those Mountainous or Northern Countries, which are for the greatest part of the year covered with snow: Where also many other Animals change their native colours, and become white, as Bears, Foxes, Hares, Blackbirds, &c. whether it proceeds from the force of the imagination heightened by the constant intuition of Snow, or from the cold of the Climate, occasioning such a languishing of colour; as we see in old Age, when the natural heat decays, the hair grows grey, and at last white.

They say that a Raven may be reclaimed and trained up for fowling, after the manner of a Hawk.

Ravens are found not only in one part or Region of the World, but abound in all Countries: Do easily bear all changes of weather, fearing neither heat nor cold, enduring well to abide and live where-ever there is plenty of meat for them. And though they are said to love solitude; yet do they very often live and build in the midst of the most populous Cities, as *Aldrovandus* delivers, and experience confirms. They build in high Trees, or old Towers, in the beginning of March with us in England, and sometimes sooner. They lay four or five, and sometimes six Eggs before they begin to sit. Their Eggs are of a pale greenish blue, full of black spots and lines.

What is reported by *Hesiod* and others of the Ancients, of the long lives of Ravens is without doubt fabulous. But that all Birds in general compared with Quadrupeds are long-lived we have already proved by divers examples in several kinds: And that Ravens are in the number of the longest lived we will not deny.

§. II.

The common or carrion Crow, Cornix.

Its weight, length, and breadth. The Cock, which we described, weighed twenty two ounces [another but twenty.] Its length from the tip of the Bill to the end of the Feet was eighteen inches and an half, to the end of the Tail about an inch more: Its breadth between the extremities of the Wings spread two feet and two inches. The Bill strong, thick, straight, from the tip to the Angles of the Mouth two inches and almost an half long; the lower Mandible being somewhat the shorter: The Tongue cleft, and as it were jagged or torn. The Eyes great, having *Irides* of a Hazel colour. The Nostrils round, covered with black bristles reflected toward the end of the Bill. The Plumage of the whole body is black, only the ground or bottom of the feathers of a Lead or dark ash-colour.

The beam-feathers are in number twenty in each Wing; whereof the first is shorter than the second, the second than the third, that than the fourth, which is the longest of all, being by measure ten inches three quarters: The inner of these feathers end in sharp points.

The Tail was seven inches and an half long, composed of twelve feathers of equal length.

The Legs and Feet black: The Claws black and strong: The outmost fore-toes joyned to the middle one from the bottom as far as the first joynit.

The Liver divided into two Lobes; of which the right is the greater. It hath a large Gall, which empties it self by a double channel into the Guts. The Mulcules of the stomach are but small. The Guts have many revolutions: The blind's no more than half an inch long. Scarce any foot-step to be found of the *Ductus intestinalis*. This channel conveying the Yolk to the Guts.]

This Bird delights to feed upon Carrion, that is the Carcasses of dead Animals when they begin to putrefie. Neither doth it feed only upon Carrion, but also set upon, kill, and devour living birds, in like manner as the Raven: Moreover, it eats Grain and all sorts of Insects in England at least. For beyond Seas they say it meddles with no kind of Grain.

This kind of Bird abounds with us in Britain, as *Cardan* and *Turner* truly observe, because here is plenty of food for them. They build upon high trees, and lay four or five Eggs at a time, like Ravens, but less. They are very noisom to Lambs new-year'd if they be weak and feeble, first picking out their eyes. They are said to have a very sagacious sent, so that it is difficult to shoot them, they smelling the Gunpowder at a great distance.

Ravens, Crows, &c. roost (as they say) upon trees with their Bills directed toward the Sun-rising.

That the Crow it self (saith *Aldrovandus*) is capable of humane speech, and hath been taught to pronounce several words, both we our selves do certainly know, and *Pliny*, a Witness beyond exception, testifieth, writing thus: There was also in the City of Rome, whilst I was recording these things, a Crow belonging to a Roman Gentleman, brought out of Bactica, first admirable for its colour, which was exceeding black, then pronouncing many words in connexion, and still learning more and more. As for its pace, it is reckoned among those birds which neither run, nor leap, but walk. *Aldrovandus*.

The Females only sit, and that diligently, the Males in the mean time bring them food, as *Aristotle* saith. In most other birds which pair together, the Male and Female sit by turns. They do not (saith *Aldrovandus*) as I bear, feed their Young till they begin to be feathered; the same also is reported of Ravens, and many other birds that are much on the Wing. You will say, wherewithal are they nourished in the mean time, and how do they grow? I answer, with the Yolk of the Egg remaining in the Belly after exclusion. For we have elsewhere shewn, that a good part of the Yolk is received into the cavity of the belly in birds newly hatched, which being by degrees conveyed into the Guts by a certain passage called by us *ductus intestinalis*, serves to nourish the Young newly excluded.

§. III.

Cornix frugivora seu frugilega: The Rook.

It weighed nineteen ounces: Its length from the tip of the Bill to the end of the Tail was twenty inches, to the end of the Claws eighteen. The breadth or distance between the tips of the Wings extended thirty eight inches. It hath no Crow, but instead thereof the Gullet below the Bill is dilated into a kind of bag, wherein it brings meat to feed its Young.

In the old ones of this sort the feathers about the root of the Bill as far as the Eyes are worn off, by often thrusting the Bill into the ground, to fetch out Earth-worms, &c. So that the flesh thereabouts is bare, and appears of a whitish colour: By which note this bird may be distinguished from the common Crow. Howbeit the Bill it self is not white, as *Belonius* writes, and others believe. It differs also from the Crow, 2. In that it is somewhat bigger: 3. In the purple splendour or glois of its feathers: 4. In that it is gregarious, both flying and breeding in company.

The number of beam-feathers in each Wing is twenty, of which the fourth is the longest, being by measure ten inches and a quarter. The shafts of the middle Wing-feathers end in bristles or spines. The Tail is seven inches and an half long, made up of twelve feathers; the exterior whereof are a little shorter than the middle ones.

The Bill from the tip to the Angles of the mouth is two inches and an half long. The Nostrils round: The Tongue black, horny, and cloven at the end. The hind-toe hath a large strong Claw. The outmost fore-toe is joyned to the middlemost, as in the Crow.

It hath a large Gall; short blind-guts like the Crow, of about half an inch. The stomach is great and muculous as in granivorous birds: The Guts wide and variously reflected. They are most greedy of Corn, yet feed also upon Earth-worms and other Insects, refraining from garbage and carrion.

Manner of breeding.

Eggs.

They build many together upon high trees about Gentlemens houses, who are much delighted with the noise they make in breeding time. Both Cock and Hen sit by turns. Their Eggs are like *Crows*, but lesser, spotted with greater spots, especially about the blunt end.

I have been told by a worthy Gentleman of *Suffex*, who himself observed it, that when *Rooks* build, one of the Pair always sits by to watch the Nest, till it be finished, whilst the other goes about to fetch materials. Else if both go, and leave the Nest unfinished, (as sometimes they venture to do) their fellow-Rooks ere they return again, will have rob'd and carried away to their several Nests all their sticks, and whatever else they had got together. Hence perhaps the word *Roosting* with us is used for cheating or abusing.

How to fright them away.

These Birds are noisome to Corn and Grain: So that the Husbandmen are forced to employ Children with hooting, and Crackers, and Rattles of Metal, and finally, with throwing of stones to scare them away. Such as have no Servants or Children to spare for such a purpose, make use of other devices; either of Mills made with Sails, to be turned by the Wind, making a continual snapping as they turn, where-with they fright the birds, or of Bugbears, or (as we call them) Scare-Crows placed up and down the fields, and dressed up in a Country habit, which the birds taking for Country men dare not come near the grounds where they stand.

I was also told by the fore-mentioned Gentleman, that if *Rooks* infest your Corn, they will be more terrified by taking a *Rook* and plucking it limb from limb in their fight, and then casting the several limbs about your field, than if you hang up half a dozen dead *Rooks* in it.

§. IV.

The Royston Crow. *Cornix cinerea frugilega.*

Its weight and measure.

That we described weighed about twenty two ounces. Its measures were from the point of the Bill to the end of the Tail twenty two inches; to the Angles of the mouth two inches and an half: Between the Wings extended, three feet and three inches.

Its Bill, Nostrils, Tongue, Eyes.

The Bill long, strong, smooth, black, but having the tip whitish; the upper Chap somewhat longer than the lower, and a little bowed or crooked. The Nostrils round, covered with bristly hairs. The Tongue broad, black, a little cloven, and rough on the sides. The *Irides* of the Eyes of a cinereous Hazel colour.

The colour of its feathers.

The Head, Wings, and Throat, as far as the Breast-bone black, with a certain blue gloss: The Breast, Belly, Back, and Neck cinereous or grey, the shafts of the feathers being blackish. The feathers on the Throat where the black and cinereous meet have their exterior sides cinereous, and their interior black. The Back is of somewhat a darker ash-colour than the Belly.

The quills or prime Wing-feathers. The Tail.

It hath in each Wing twenty master-feathers, of which the first is the shortest, the third, fourth, and fifth equal. From the sixth the shafts being produced above the feathers, end in sharp points. The Tail consists of twelve feathers, the exterior whereof were gradually something shorter than the interior to the middlemost, which were seven inches and an half long.

The Toes and Claws.

The back-toe and Claw are large: The exterior and interior fore-toes equal, and their Claws reach as far as the root of the Claw of the middle Toe. The outmost and middle Toe are joined at the bottom as in the *Crow*.

Its Entrails, Food.

The Liver is divided into two Lobes: The Stomach or Gizzard large, and in that we dissected was full of Wheat, Barley, and other Grain. It is infested with Lice and Ticks.

Place.

In Summer time (saith *Aldrovandus*) it lives in high Mountains, where it also builds: In the Winter (compelled as is likely by the cold) it descends into the Plains. On the Heaths about *Newmarket*, *Royston*, and elsewhere in *Cambridge-shire*, it is frequently seen in Winter time.

§. V.

§. V.

The Jack-daw, Monedula.

It weighed nine ounces and an half; being in length from the tip of the Bill to the end of the Tail thirteen inches and an half, in breadth between the tips of the Wings spread two feet four inches and an half. The Bill is strong, from the point to the Angles of the mouth an inch and a quarter long. The Nostrils round. Little hairy feathers cover the Nostrils, and half the Bill: The Tongue cloven; the *Irides* of the Eyes whitish; the Ears large.

The hinder part of the Head as far as the middle of the Neck inclines to an ash-colour, as also the Breast and Belly, but less; else the whole Plumage is black with a kind of blue gloss: the fore-part of the Head is of a deeper black.

The number of prime feathers in each Wing is twenty: Of which the first is shorter by half than the second, the third and fourth the longest of all. From the eleventh, the six following have the tops of their Vanes so running forth on each side above their shafts, that these feathers seem to be crenate in their tops; and from the Angle of that notch the shaft of the feather is continued in form of a bristle. The number of Tail-feathers is twelve, whereof the exterior are somewhat shorter. The length of the Tail five inches and an half.

The back-toe and Claw greater than in other birds is usual. The outmost fore-toe joined to the middlemost at the bottom, as in the rest of this kind.

It hath no Craw: The stomach is muculous: The length of the Guts was twenty four inches. It feeds upon Nuts, Fruits, Seeds, and Insects. The Appendices or blind Guts small, and scarce an inch long.

The Head of this Bird, in respect of its body, is great; which argues him to be ingenious and crafty; which is found true by experience.

Jackdaws usually frequent and build in ancient Castles, Towers, Houses, and Stone-walls, especially if they be desolate and ruinous, in great numbers. They build also sometimes in Trees, as we can testify upon our own experience, though *Aldrovandus* be unwilling to believe it. They lay five or six Eggs, lesser, paler, and having fewer spots than those of *Crows*.

Aldrovandus makes the Latine *Graculus*, which answers to the Greek *Koλoις*, a common or general name, containing under it four Species, viz. the *Coracias* or Chough, the *Lynx* or Jackdaw, the *Scurra* or *and the Graculus palmipes* or Shag. But the words *Koλoις* and *Graculus* are sometimes appropriated to the *Jackdaw*, as he acknowledges.

Besides the common *Jackdaw* we have now described, *Aldrovandus* sets forth a figure of another, differing from this, only in that it hath a white ring about its neck. *Gesner* also writes from the report of others, that about *Zug* in *Switzerland* there is found a *Jackdaw* distinguished from the common by a ring of white encircling his neck. As for that Species of Daw [*Graculus*] in *Rhetia* known by the name of *Tulla*, which *Gesner* also mentions, having a blue head; he giving us no other notes of it, I cannot tell what to determine concerning it. The Vulgar and ignorant *Fowlers* love to tell wonders, and amplify things, and therefore their relations are not much to be confided in. What *Gesner* delivers of his own sight or knowledge, I readily believe and accept for true, he being an Author of great judgment, and no less fidelity and integrity: But what he hath from the relation of others I do often suspect. Besides it is to be observed, that short, rude, imperfect, and general descriptions, made by such as were not practised and skilful in describing and observing the certain and characteristic notes of each Species, have occasioned great confusion, and multiplication of more kinds of birds and other Creatures than Nature hath produced.

§. VI.

§. VI.

The Cornish Chough, Coracias seu Pyrrhocorax.

The Female weighed twelve ounces and an half, the Male thirteen. The length from the point of the Bill to the end of the Feet sixteen inches and an half, to the end of the Tail seventeen. The Wings spread were thirty three inches and an half wide.

It is like a *Jackdaw*, but bigger, and almost equal to a *Crow*. It differs chiefly from the *Jackdaw* in the Bill, which is longer, red, sharp, a little bowed or crooked: The upper Mandible being something longer than the lower. The Nostrils round: The Tongue broad, thin, and a little cloven, shorter than the Bill. The sides of the fissures of the Palate and Windpipe and of the root of the Tongue are rough, and as it were hairy. Feathers reflected downwards cover the Nostrils. The Feet and Legs are like those of a *Jackdaw*, but red of colour. The Plumage of the whole body all over is black.

The number of prime feathers in each Wing is twenty: Of which the first is shorter than the second, that than the third, the third than the fourth, which is the longest of all, being by measure ten inches and an half. The Wings complicated extend as far as the end of the Tail. The Tail-feathers are in number twelve, all equal, or if any difference be, the middle a little the longer, as in the rest of this kind, being by measure 5½ inches.

The Liver was divided into two Lobes, of which the left was the less: The Spleen long, soft, and round: The Stomach fleshy, and full of Insects.

It frequents Rocks, old Castles, and Churches by the Sea-side. It is found not only in *Cornwall*, but also in *Wales* and all along the Western Coast of *England*, about the Cliffs and Rocks near the Sea. Its Voice is like that of the common *Jackdaw*, but more hoarse.

Aldrovandus will needs have the *Pyrrhocorax* to be a different bird from the *Coracias*, following therein *Aristotle*. *Belonius* makes these names *Synonyma* of the same bird; we must needs confess, that if there be such a bird as *Aldrovandus* describes v. g. less than a *Crow*, equal to a *Jackdaw* having yellow Bill and Feet, it is distinct from our *Chough*. But I am sure the Bird frequent on our Western Shores, and commonly known by the name of the *Cornish Chough*, is that which *Belonius* and *Turner* make to be the *Pyrrhocorax*, and hath red Legs and Feet. Wherefore I take the *Coracias* and *Pyrrhocorax* of *Gejser* and *Aldrovandus* to be one and the same bird, notwithstanding the Bill and Legs in this are said to be yellow; which perchance may be so in the *Coracias* or *Chough* when young.

§. VII.

Bontius his Indian Raven.

There is a strange kind of *Raven* in the *Molucca* Islands, and especially in *Banda*, which resembles our Country *Raven* in the Bill; but in the Temples is coloured like those * *Meleagrids* which the *Low Dutch* call *Kalcontse hanen*. It hath a great thick Bill, a little pointed, and made for Rapine; wide Nostrils; great, black, ill-favoured Eyes: The Head and Neck long, decently covered or adorned with blackish feathers. Its Feet and Toes strong, armed with long, crooked, and very hard or solid Claws. It walks after the manner of our *Raven*: But differs from it in nature and disposition; in that it feeds not upon Carrion or dead Carcasses, but chiefly upon *Nutmegs*, of which it is very greedy, making great destruction of that fruit, to the no small detriment of the Owners. Its Flesh is very delicate, and being roasted hath a plain aromatical relish, contracted from its food.

§. VIII.

§. VIII.

* *The horned Indian Raven or Topau, called the Rhinoceros Bird.*

This horned Bird as it casts a strong smell, so it hath a foul look, much exceeding the *European Raven* in bigness. It hath a thick Head and Neck, great Eyes; the Bill but moderate in respect of the body: The longer and more acuminate part bending downward argues the Bill to be made and designed for rapine: But the upper part, which is shorter, thicker, and bending upward doth resemble a true Horn, both to the sight and touch: The one moiety whereof, viz. that toward the Head, is * contiguous to the Bill, so that both together after the same manner grow to [or rather spring out of] the end of the Head: The other moiety is separate from the Bill, bending the contrary way, viz. upwards, so that * they seem to be like the forked tail of a Fish. It lives upon Carrion and Garbage, i. e. the carcasses and Entrails of Animal.

Aldrovandus describes the Bill thus: It is almost twenty eight inches long, crooked, not after the manner of rapacious birds, but like a Bow. All the lower part is of a pale or whitish yellow, the upper part toward the Head of a red or Vermilion, else of the same colour with the lower. The upper Mandible only within is ferrate or oriented after the manner of the * *Toucan*. The horn springs out of the forehead, and grows to the upper part of the Bill, being of a great bulk, so that near the forehead it is a Palm broad; not unlike the *Rhinoceros* horn, but crooked at the tip: The colour both in the upper and lower part is Vermilion, in the middle yellow. If the rest of the parts of the body are answerable to the Head; I am of *Cardanus* and *Plinius* opinion, that this Bird is bigger than an *Eagle*.

Of this sort of Bill we have seen three varieties, all which we have caused to be engraved and exhibited to the Readers view.

CHAP. III.

Of the Pie-kind.

§. I.

The Magpie or Planet. Pica varia caudata.

It weighs eight or nine ounces. Its length from the tip of the Bill to the Claws is twelve inches and an half, to the end of the Tail eighteen. The Bill about an inch and half long, black, thick, and strong, the upper Chap being somewhat crooked and sharp-pointed; the Tongue cloven at the end, and blackish, like to that of a *Jay*. The sides of the fissure of the Palate rough with hair-like excrescencies. The Nostrils round, and beset with reflected bristly hairs. Excepting the whiteness of the Breast and Wings, and the length of the Tail, this Bird is very like the *Jackdaw*. The Irides of the Eyes are of a pale Hazel colour. In the nictating membranes is seen a yellow spot.

The Head, Neck, Throat, Back, Rump, and lower Belly are of a black colour; the lower part of the Back near the Rump is more dilute, and inclining to cinereous. The Breast and sides are white, as also the first joint of the Wing. The Wings are smaller than the bigness of the body would seem to require. The Tail and prime feathers of the Wings glister with very beautiful colours (but obscure) of green, purple and blue mingled, only in the exterior Vans. The number of beam feathers is twenty; of which the outmost is shorter by half than the second; the second also shorter than the third, and that than the fourth, but not by an equal defect; the fourth and fifth are the longest of all. The eleven foremost about their middle part, on the inside of the shaft are white, the white part from the extreme feather gradually decreasing, till in the tenth it be contracted into a great spot only.

The Tail is made up of twelve feathers, of which the two middlemost are the longest, being by measure eight and an half or nine inches; the next to them above an inch

* *Corvus indicus cornatus seu Rhinoceros avis Bonii, Aldrov.*

* Rather continuous. * The bill and horn together.

* The Bill as in Pic.

Its weight and measure, its Bill,

Tongue,

Nostrils.

It is like the *Jackdaw*.

The colour of its feathers,

The Wing-feathers.

The Tail.

Its Feet.

inch shorter, and of the rest the exterior than the interior in like proportion. The greatest and longest, that is the middle feathers of the Tail, have their bottoms green, their middles blue, and their tops purple.

The Feet and Claws are black : The lowest bone of the outmost fore-Toe is joyned to that of the middle.

Entrails.

The length of the Guts was twenty four inches, of the blind Guts half an inch. It hath a Gall-bladder, and a long Spleen : The Stomach not very fleshy, and having its *Echinus*.

It varies sometimes in colour.

There are sometimes found of this kind all over white, but rarely. In the *King's Aviary* in St. *James's Park* we saw brown or reddish ones.

They may be taught to speak.

This Bird is easily taught to speak, and that very plainly. We our selves have known many, which had learned to imitate mans voice, and speak articulately with that exactness, that they would pronounce whole Sentences together so like to humane Speech, that had you not seen the Birds you would have sworn it had been man that spoke.

Its Nest.

They build their Nests in Trees with that Art and cunning as is admirable, fencing them round on the outside both above and below with sharp thorns, leaving only one hole, and that a very narrow one, for themselves to pass in and out. He that desires an exact description of the Nest let him consult *Aldrovandus* : With us in *England* they are so common every where, that we thought it not needful to insist longer on the describing of them. It lays five or six, and sometimes seven Eggs at once, seldom more; greater and paler than *Crows* Eggs, and very thick spotted with black.

Its Eggs.

Its Food is the same with that of the *Jackdaw*. Its fets upon, kills, and devours *Sparrows*, and other small birds : Yea, we have sometimes seen a *Magpie* strike at a *Blackbird*.

§. II.

The *Brazilian Pie* of *Aldrovandus*, lib. 12. cap. 19. The *Toucan* of *Marggrav*. and others, The *Xochitlencat* of the *Mexicans*, *Nieremb*.

Its bigness. Bill.

IT is of a middle size between a *Pie* and a *Blackbird*. *Thevetus* reports, that the Bill is thicker and longer than almost the whole body besides. The Bill is near two Palms long, and one broad, being measured from the beginning of the lower Chap to the end of the upper. The lower Chap where it is thickest, viz. near the Eyes, is twice as little as the upper, and near the end, where it is crooked, thrice. It is of a very thin substance like Parchment, but bony, shining, very light, hollow, and inwardly capable of a great deal of Air : For which reason I think, contrary to the manner of other Birds, its wants Nostrils : The Bill being so thin that the Air can easily penetrate it. And if Nature had made any aperture in it, it would have rendered it obnoxious to fracture. Hence also perchance it is, that the hath furnished it with certain teeth, so disposed that the Bill cannot be shut exactly close, but easily admits the ingress of the Air. The Bill, I say, is serrate, and as it were composed of certain little scales, which may easily by the fingers be plucked off, [or asunder.] The colour of the Bill is yellowish, more in the lower than the upper part [inwardly it is of a pleasant red] toward the end (saith *Nieremburgius*) of a Scarlet colour. The Head in proportion to the body is great and thick, as is futable and requisite to sustain a Bill of that length and bigness; black; yet the Crown, whole Back, and Wings shew something of whiteness. The Eyes are great, placed in the middle of the Head : The I upil very black, encompassed with a white circle, and that again with a yellow. The Neck, Back, and Wings are black. The Breast shines with a most bright and lovely Gold or Saffron colour, with a certain redness near the beginning; the Belly and Thighs with a most beautiful Vermilion. The Tail again is black, but in the end of a notable red.

It wants Nostrils.

Its Head.

Eyes.

Colour.

Its food Pepper.

This story *Faber* discredits because none of his *American* friends spoke a word of it.

It is made so tame, as to sit and hatch its Young in Houses. *Thevetus* reports, that this bird feeds upon Pepper, which it most greedily devours, gorging it self therewith, so that it voids it again crude and unconcocted; and that the Natives make use especially of that Pepper, preferring it before that which is fresh gathered from the Plant, because they persuade themselves that the strength and heat of the Pepper is qualified and allayed by the Bird, so that afterwards it is less noxious. All this out of *Aldrovandus*. *Faber* suspects the story of the Pepper, because his *American* friends, whom he consulted about this Bird, made no mention of any such thing. I suspect that

that the Toes in this Bird are disposed after the manner of the *Woodpeckers*, viz. two forwards, and two backwards. For such is the conformation of the Feet of the *Aracari* of *Marggrave*, a bird near of kin, and very like to this. And *Thevetus* in his figure expresses only two foretoes.

Since the writing of this, hapning to read in *John Faber* his Expositions of some Pictures of *New-Spain* Animals of *Recchas*, I found there mentioned a bird of this sort seen and described by *Carlo Antonio dal Pozzo* at *Fontain-bleau* in *France*, with its Toes so disposed as I imagined, viz. two forwards two backwards, as in *Woodpeckers*, to the genus whereof the *Toucan*, as *Faber* in this place proves, doth undoubtedly belong. For it not only hath a like situation of Toes, but also in like manner hews holes in trees to build its Nest in, as *Frier Peter Alvasja*, and other *Indians* and *Spaniards*, who had long lived in *America*, told *Pozzo* for a certain truth; and *Oviedo*, in the forty third Chapter of his Summary of the History of the *West Indies* published in *Italian*, writes; adding, that he thinks there is no bird secures her young ones better from the *Monkeys*, which are very noisom to the Young of most Birds. For when the perceives the approach of those Enemies, she so settles her self in her Nest as to put her Bill out at the hole, and gives the *Monkeys* such a welcom therewith, that they presently pack away, and glad they scape so. From this quality of boring trees this Bird is by the *Spaniards* called *Carpintero*, and by the *Brazilians* *Tacataca*, in imitation I suppose of the sound it makes.

Because the Bird exactly described by *Dal Pozzo*, seems to be specifically different from that of *Aldrovandus*, I shall here add his description.

It was (saith he) a little bigger than the common *Magpie*. [*Levis* maketh it of the bigness of a *Dove*; *Oviedo*, not bigger, or but little bigger than a *Quail*.] Its Bill, which is very broad, had its upper part [or Chap] whereto grew to the Head, tinged with green, a line of green being also thence produced to the point; but its lower Chap at its setting on to the Head a blue colour. All the rest of the Bill was of a dark red, like *Serpentine* wood, with many intercurrent black spots and lines. *N.B.* Its Bill was empty and hollow, and upon that account very light [*Oviedo* makes it very heavy, and to weigh more than the whole body besides, which is certainly a mistake] so that it had little strength in it, neither could the bird peck or strike smartly with it. Its inside was of a Saffron-colour, but blue toward the tip.

It had a very flat thin Tongue, not much unlike those long feathers on the Neck of a *Dunghil-Cock* : This it moved up and down, and stretch out to the length of the Bill. It was of a true flesh-colour, and which you would wonder at, fringed, as it were, on each side with very small filaments, which made it shew like a true feather. [This *Oviedo* also confirms.]

Its feathers on the Neck down to the middle of the Breast were whitish, terminating in a footy colour; on the Head and Back blackish. Round the Eyes was a space bare of feathers, but curled with hair, of a Violet-colour, as is seen also in *Parrots*. The rest of the body was covered with feathers of a Weasel-colour [*unfelini coloris*.] It had no Tail, [having been, I suppose, plucked off] but one ready to come; the beginning whereof consisted of feathers of a dark white, particoloured with black, weasel, and Vermilion colour. It also frequently fluted up that rudiment of a Tail, as *Wrens* and *Wagtails* are wont to do.

Each foot was divided into two Toes standing forward, and two backward; above of a Violet-colour, underneath of an ash or grey.

It often hopped and leapt up and down, and cried with a voice not unlike the chattering of a *Magpie*.

It fed upon almost all the same things that *Parrots* do, but was most greedy of Grapes, which being plucked off one by one, and tossed to it, it would most dextrously catch in the Air before they fell to the ground. The flesh of the whole body was of a deep Violet colour.

Faber doth not undeservedly enquire how, seeing the Bill is so light and thin, the Bird can pierce trees with it? Which difficulty he thus satisfies; that though it be thin and light, yet is it of a bony substance, and therefore it is not to be wondered at that, dextrously used by the living Animal, it should therewith by many repeated strokes pierce a tree, having perchance the instinct to chuse a rotten one, as we see drops of rain wear holes in Flints, nay, the very feet of *Pipmires* walking often over them, as *Pliny* observes, make impressions on them. * *Levis* writes, that this Bird is of the colour of a *Raven* except the Breast, which is of a Saffron-colour, compassed beneath with a line of Vermilion; the skin of which part plucked

S off

off the *Indians* dry, and use for an ornament of their Cheeks, gluing it on with Wax.

This same Bird is described by **John de Laet*, out of a *Portuguese* Author, and out of the same by **Marggrave*. It is of the bigness (saith he) of a *Pie* or *Dove*, hath a Crop under the Breast three or four inches broad, of a Saffron-colour, and compassed about the borders with Vermilion feathers. The Breast is yellow, the rest of the body black. One would wonder how so little a bird could carry so great a Bill, but it is exceeding light, and very tender.

We have seen in several Cabinets the Bill of this Bird, and our selves have also one of them.

§. III.

The Jay. *Pica glandaria*.

It weighed seven ounces. Its length from the point of the Bill to the end of the Tail was fourteen inches; to the end of the Feet but twelve and an half: The distance between the extremities of the Wings spread twenty one and an half. The Bill black, strong, from the tip to the Angles of the mouth about or near an inch and half long: The Tongue black, thin, pellucid, and cloven at the tip: The *Irides* of the Eyes white. The feathers of the Head and Body in this bird are taller, slenderer, and stand more staring or erect than ordinary. Near the lower Chap of the Bill are two black spots, on each side one: The Chin and lower part of the Belly whitish: Else the Breast and Belly are of a colour mixt of cinereous and red. The Rump above is white: The Back red, with a certain mixture of blue: The feathers on the crown of the Head variegated with black and white.

The Sails of the Wings are in number twenty: Of which the first is shorter by half than the second: The fourth the longest, being by measure six inches and a quarter. As for their colours, the first or outmost is black, the bottom or lower part being white, which is proper to it alone: The six next following have their exterior Vanes of an ash-colour; the three next likewise, but more obscure and mingled with blue, being also marked toward their bottoms with transverse black and white strokes. The five succeeding have their exterior Vanes half white, half black, viz. the lower half white, the upper black, but so that each extremity of the white is terminated with blue. The sixteenth in place of the white of the four precedent hath transverse blue, black, and white spots: The seventeenth is black, having one or two blue spots: The eighteenth is black, with some little red: The nineteenth red, with the tip black. The undersides of all the feathers of the Wing are of a dark or dusky colour. The covert-feathers of the fifteen exterior Sails are very beautiful, being variegated or chequered with black, white, and lovely shining blue lines: The rest of the covert-feathers being black.

The Tail is six inches and a quarter long, consisting of twelve feathers, wholly black, except toward their roots: Under the Rump there is something of blue mingled with cinereous.

The Feet and Toes are of a ferrugineous, dusky colour. The middle Toe is the longest, the outmost is equal to the back-toe. The lower *internodium* of the outmost Toe is joyned to the middlemost. The back Claw is greatest.

The Eggs are cinereous, with darker spots scarce appearing. The Guts twenty four inches long; the blind Guts but half an inch. It hath a Gall, and a long Spleen: The Stomach or Gizzard not very fleshy, and having its *Echinus*: Wherein we found *Acorns*, &c. Yet it feeds not only on *Acorns*, (whence it got the name of *Pica glandaria*) but also upon *Cherries* (of which it is very greedy) *Goose-berries*, *Raspberries*, and other fruit.

It differs from that described by *Aldrovandus*, in that it hath no transverse spots in the Tail.

The Female differs little or nothing from the Male either in bigness or colour, so that it is very difficult to know them asunder.

It learns to imitate mans voice, and speak articulately as well as a *Jackdaw*.

Its weight and measures.

Bill, Tongue, Eyes, Feathers, Colour.

Wing-feathers.

Its Tail.

Feet and Toes.

Eggs, Guts.

Gizzard, Acorns, &c.

How it differs from *Aldrovandus* Jay.

It learns to speak.

§. IV.

The Roller, *Garrulus Argentoratenis*.

The bird we described was a Cock, and weighed six ounces. Its length from the tip of the Bill to the Claws eleven inches and an half, to the end of the Tail thirteen and an half: The breadth or distance between the tips of the Wings spread twenty six inches.

The Bill was black, sharp, something hooked, otherwise like to that of a *Jay*, from the point to the Angles of the mouth $1\frac{1}{2}$ inches long. The *Irides* of the Eyes were of a pale hazel-colour. Near the Eyes, toward the hinder part of the Head, were two bunches, as it were Warts, void of feathers. The Tongue black as in *Jays*, jagged or torn, but not cloven: The roof of the mouth green, and having a double cleft or fissure. The bottom of the Palate is rugged or rough with little bunches. At the Base of the Tongue there is only a little forked excrescency on each side. The circumference of the Eyes is bare or void of feathers.

The Rump and lesser rows of covert feathers of the Wings are of a lovely blue or ultramarine colour (as the Painters call it.) The middle of the Back between the shoulders red: The Head of a fard green, mingled with blue; of which colours is also the Throat, with white lines in the middle of each feather. The Breast and Belly are of a pale blue, like those of a *Pigeon*.

The number of Sails in each Wing is twenty, of which the first, second, and third are equal, and from the tenth all the rest. Almost all of them have their lower half blue, and the upper black. The foremost are black almost down to the bottom, only in their exterior Webs they have a mixture of blue. The covert feathers of the Wings are of a pale blue, of which colour also, but paler are those that thrive the underside of the Wing.

The Tail consists of twelve feathers, of which the ten intermediate are equal, each being four inches three quarters long: The two extreme longer than the rest by three quarters of an inch. The two middlemost are of a dark ash-colour, the next to them have their tips of a bluish white, which colour gradually increases in the rest, till in the outmost it takes up half the feather. Below the white the interior webs of the feathers are black, and the exterior blue: The tips of the outmost feathers are black. The tail-feathers and sails of the Wings where ever they are blackish above, are blue underneath. The outmost feather of the * *Ala notha* is black, the rest * *Baffard-Wing*, blue.

The Feet are short, and like those of a *Dove*, of a dirty yellow colour: The middle Toe the longest, next to that the outmost fore-toe. The Claw of the middle Toe in the inner side is edged. The Claws are black; and the Toes divided to the bottom.

The Stomach within was of a Saffron colour, and therein we found a large Gizzard and hopper: The Guts thirteen inches and an half long; the blind Guts two and an half.

We found of these Birds not only in *Germany*, but also in the Isles of *Sicily* and *Malta*, to be sold in the Markets, and in the Poulterers shops.

There are many singular and characteristic marks in this bird; as 1. The knobs or wart-like bunches under the eyes. 2. The figure of the Tail, the outmost feather on each side being longer than the rest. 3. The Toes divided down to the bottom. 4. The Tongue having only two forked *Appendices*.

* Gensers blue Crow; the same I suspect with the precedent.

The blue Crow, whole figure *Jo. Kentmannus*, sent to *Gesner*, but the History thereof *George Fabricius* out of *Misnia*; is a wild bird, and not easy to be tamed; called by the *Misnians*, * *Ein wild Holtzkrac*, of others, *Galgen-regel*, or *Halek-regel*. It is found beyond the River *Elb*, in the *Luchovian* Forest, and in the neighbouring Woods: It haunts and abides in desert and unfrequented places. Some from the colour call it *Ein Tentschen Pappagey*, that is, *The German Parrot*. It is transported into Foreign Countries for no other commendation but the colour. So far *George Fabricius*. The Bill (as the Picture shews) is black: The Legs dusky, and for the proportion of the body small. It is here and there all over the body, viz. on the Head,

Its weight and measures.

Bill, Eyes, Bare Wart-like bunches, Tongue, Palate.

Skin about the Eyes bare. Its Colours.

Wing-feathers.

Tail.

* Baffard-Wing.

Feet, Toes, and Claws.

Its place.

* That is, a wild Wood-Crow.

Wings, Tail, about the Rump, and all the under side of a shining blue colour, in some places more sincere, in some mixt with green. The colour of the Back and upper side of the Neck is dusky: The greater feathers of the Wings black. *I am verily persuaded, that this bird is no other than the Strasburgh Roller.*

§. V.

* *The Sea-Pie.* Pica Marina.

Aldrovandus in the twelfth Book and fifteenth Chapter of his *Ornithology* doth thus briefly describe this bird. The whole Bird, excepting the Head, Neck, Feet, and also part of the Wings, is of a greenish colour. The Bill is strong, a little longer than a *Pie*, very sharp. The top of the Head, and down as low as a third part of the Neck, is of a delayed Chestnut colour. The lower part of the Head to the Temples and Eyes yellow. The Eyes black, with yellow *Irides*, encompassed again with a black circle. The Feet dusky; the Toes long; the Nails very crooked and black: The rest of the body green, except the second row of Wing-feathers, which are of a dilute Chestnut, having their ends blue.

Whether he himself saw this Bird, or described it from a picture, he tells us not: But in that he affirms, that the *Strasburgh Roller* never lives in maritime places, and so without reason challenges the name of the *Sea-pie*, which the *Bolognese* (as *Gesner* witnesseth) attribute to it, he is without doubt deceived: Sith we our selves (as we said before) saw at *Messina* in *Sicily*, and in the *Isle of Malta* several of them.

§. VI.

* *The Persian Pie.* Aldrovandus.

The bird which *Aldrovandus* calls by this name, and describes from a Picture, sent him from *Venice*, hath a strong, thick, short, whitish Bill: Also white Eyes with a black Pupil. The second row of Wing-feathers, the Rump, and foremost feathers in the Tail are yellow. The Feet are bluish with black tabulary scales: The Claws small, but crooked and black: Else it is all over of a dusky colour. Besides these *Dr. Charleton* in his *Onomasticon Zoicon*, p. 68. mentions another sort of *Pie*, viz. * *The Indian Mock-bird*, not much unlike the *Jay*, but somewhat smaller. We have not as yet had the hap to see this bird: Nor is there any thing written of it by others, that we know of.

§. VII.

Caryocatactes, Gelin. and Turn.

It weighed five ounces three quarters. Its length from the Bill to the end of the Toes was thirteen inches and an half, to the end of the Tail the same. The breadth between the tips of the Wings spread twenty two inches and an half.

The Bill from the tip to the corners of the mouth is almost two inches long, black, strong, and like that of a *Pie*, save that it is not sharp pointed, but blunt at the end, and the upper Mandible a little prominent. The Tongue is short, scarce reaching beyond the Angle of the lower Mandible, cloven with a deeper incision than in any other Bird I have observed. In the lower Chap from the Angle is a wrinkle exactly equal to the fissure or cleft of the Tongue; so that the Tongue seems never to extend further, the wrinkle filling up the fissure. The bottom of the Palate and sides of the fissure therein are rough. The *Irides* of the Eyes are of a hazel colour: The Nostrils round, and covered with whitish, bristly, reflected feathers.

The whole body, as well lower as upper side, is of a dusky red; all over, except the Head, beautified with triangular white spots in the tops of the feathers; these spots on the Breast are greater than elsewhere. The Head is not spotted at all. The upper side of the body partakes more of red. Between the Eyes and Bill it is white. The feathers under the Tail, beyond the vent are milk-white.

The tails in each Wing are about twenty, of a black or dark colour, the Tail-feathers twelve, all of equal length, being by measure four inches three quarters, except the outmost on each side, which are a little shorter. And for their colours, the outmost

outmost on each side are three quarters white, and from them the white part is gradually less and less in the succeeding feathers to the middlemost, in which it doth wholly disappear: The rest of the Tail-feathers is of a shining black.

The Feet and Claws are black: The outmost Toe, as in the rest of this kind, is joyned to the middlemost at the bottom.

It hath a Gall; its Guts were eighteen inches long: The blind Guts half an inch: The Testicles small. It feeds on Nuts, &c. It hath a note or voice something like a Magpie.

We found this Bird in the Mountainous part of *Austria*, near the way leading from *Vienno* to *Venice*, not far from a great Village called *Schadwyen*, where there is a very steep, difficult, and craggy ascent up the neighbouring Mountains whereupon there stand always ready there certain Yokes of Oxen, to draw the Coaches or Waggon of such as travel that way up the craggy Cliffs and Rocks, which Horses could not at all, or with great difficulty climb and struggle through, drawing a Coach after them.

§. VII.

* *The Bohemian Chatterer.* Garrulus Bohemicus, * *Aldrov.* eidem Ampelis.

* *Lia. 12. cap. 17.*

It is almost as big as a *Blackbird*, but bigger than the * *Hamfinch*. Its length from Bill-point to Tail-end nine inches: Its breadth, viz. the Wings being spread, four Palms. Whence it is manifest, that *Gesner* is mistaken, in that he writes that for shape, and size of body, and colours it approaches to the common *Garrulus*. Its Bill is of a deep black, of the bigness of a *House-Sparrow*. *Gesner's* figure represents it too long, and too crooked. The Nostrils are encompassed with hairs of the same colour, which make, as it were, a transverse black spot: In which are included the Eyes, that are round, and of a most beautiful colour, to wit, Vermilion; resembling that of the *Chalcedonian* Carbuncle, commonly called the *Grenate*: Which perchance gave occasion to some to believe that they shine in the Night. Its Head is after a sort compressed, being by *Gesner* represented too round; of a Chestnut or ferrugineous colour, adorned with a crest or tuft, bending backward, after the manner of the crested *Lark*. The colour of the Crest toward the Bill is a delayed Chestnut, but backward cinereous inclining to dusky, not unlike to the colour of * *Umber*. The Neck is short, black in the fore and hind part, red on the sides, near the Bill white. The Breast is of a chestnut or ferrugineous colour, but dilute and inclining to rose. The whole Belly is ash-coloured, except towards the vent, where are some white feathers, whose roots or lower parts, viz. from the middle to the flesh, are black, and softer than their upper parts. The Back inclines to a chestnut or bay, but toward the Rump it is cinereous or dun. The outer feathers of the Wings are black, the inner ash-coloured, but declining to black. The outer Wing-feathers are marked with spots very pleasant to behold: Some of these feathers, viz. the first, seven in number, are white, their *Appendices* being red like to Cinnabar or Vermilion. *Gesner* was told by a certain person, I know not who, but untruly, that these feathers were horny [I suppose he meant their shafts] Yet are they pretty hard and solid, long, and after a sort Cartilaginous. To these succeed other feathers adorned in like manner with spots, but of a pale yellow, resembling in some measure the figure of the Letter L: Which are so disposed, that in some feathers appear seven, in some six, and in some but five only. Again, the last feathers have white spots, which by how much they are situate nearer the outside, by so much do they become less conspicuous; so that of the last feathers of all sometimes three, sometimes two, and sometimes only one is so spotted. The covert feathers are also tipped with white. Concerning the yellow spots it is to be noted, that in the Females they are white, and that over against them are to be found other white spots. I have learned by inspection, that the Tail of the Cock consists of ten feathers only, the Tail of the Hen of twelve; which near their roots are of a dark cinereous or Mouse dun, but above are black. The end of the whole Tail is yellow, but more repulcent in the Male than in the Female. Near the vent are some other feathers of a Chestnut-colour, making as it were another Tail, but far less. The colour of the Legs is dusky, inclining to blue. The shape and bigness of the Feet answer to those of a * *Hamfinch*: The colour differs, being black in the *Garrulus*, flesh or rose-coloured in the *Hamfinch*. It hath black and crooked Claws.

See

See the description of the Entrails and Bowels in *Aldrovandus*. This Bird is said to be peculiar to *Bohemia*. It feeds upon Fruit, especially Grapes, of which it is very greedy. Wherefore it seems to me, not without reason, to be called by that name [*Ampelis*.] It is a Bird of a very hot temperament, and exceedingly voracious: flies in companies, and is easily tamed. What else *Aldrovandus* hath of its disposition and manners, food, flight, use, &c. See in his *Ornithology*. It is wonderful, and to me scarce credible, what he saith he learned by *ocular experience, to wit, that the Tail of the Cock is made up of ten feathers, the Tail of the Hen of twelve.

* xivto]iz.

CHAPTER IV.

Of Woodpeckers in general.

TO Woodpeckers, if under this name we comprehend the *Nuthatch*, the *Wall-creeper*, the great *Reed-Sparrow*, and the *Ox-eye creeper*, there are very few notes common, viz. to climb or run up trees, sticking to their bodies or boughs; and for that purpose to have strong and muculous thighs. But if we exclude the forefaid Birds, and refrain the name to *Woodpites*, properly so called, there are many and remarkable notes whereby they may be distinguished from all other kinds of birds: As for example, 1. To have a straight, hard, strong, angular, and sharp Bill, very fit and proper to pierce and bore holes in trees. 2. A Tongue of a very great length, round, ending in a sharp, stiff, bony thorn, dented on each side, to strike Ants, *Cossi*, and other Insects withal. This Tongue they can at pleasure put forth to a great length, thrusting it deep into the crannies, holes, and clefts of trees, to stab and draw out Insects lurking there. 3. Short Legs, but very strong. 4. Toes standing two forwards, and two backwards: Which is common to these and *Parrots*. Such a disposition of Toes (as *Aldrovandus* rightly notes) Nature, or rather the Wisdom of the Creator, hath granted to *Woodpeckers*, because it is very convenient for the climbing of trees. Their Toes also are close joyned together; that they may more strongly and firmly lay hold on the tree they climb upon. 5. All of them, unless perchance you except the *Wryneck*, have a hard, stiff Tail, bending also downwards, and its feathers ends often broken, and their shafts almost bare; on which they lean, and so bear up themselves in climbing. Their Tail consists of but ten feathers. 6. To feed only upon Insects. 7. To want the blind Guts, which is peculiar to this kind, agreeing to no other bird or beast beside, that we know. 8. To lay white Eggs.

Whether all these marks agree to those *American* Birds which we have ranked under this head we know not. We have referred them to this kind, for the like disposition of their Toes, two forward, two backward; especially seeing they belong neither to *Parrots* nor *Owls*.

Albertus writes that all *Woodpites* build in the hollows of trees, which before him *Pliny* also hath recorded. They themselves are said to hew out for themselves a place to build in; making such an artificial hole, so exactly round, that the most skilful and experienced Geometrician could not with his Compass make a rounder. They hatch and bring up six or seven Young at once. The Eggs of all kinds of them that we have hitherto seen are white. The *Woodpiter* is called by the *Greeks* *Δρυογλαυκός*, from striking or piercing of trees. The *Latine* name *Picus* some think to be derived from the *French* and *Italian* word *Becco*, signifying a Bill or beak of a bird. *Aldrovandus* thinks that it was rather deduced from the *Flemmish* word *Picken*, signifying to strike or knock with the Bill. The word *Pick* with us is variously applied, but originally seems to have the same signification as in *Flemmish*, viz. either to strike with the Bill, or gather up with the Bill. Hence in the North of *England* these Birds are called *Pick-trees*, a word exactly of the same signification with the *Greek* *Δρυογλαυκός*.

That *Woodpeckers* will learn to speak I can hardly be persuaded, though *Albertus Magnus* and *Scaliger* affirm it.

The *Woodpecker* was not only by the ancient *Latines*, called *Pluvia avis*, the *Rain-fowl*, but is so also by our Country men now adays, because by its voice more loud and frequent than usual it is thought to preface rain.

CHAPTER.

CHAPTER V.

Of several sorts of Woodpeckers.

§. I.

The greatest black Woodpecker.

THE Cock, which we described, weighed ten ounces and an half: being in length from the tip of the Bill to the end of the Tail eighteen inches and an half; in breadth between the tips of the Wings spread twenty nine inches and an half.

Its Bill from the point to the Angles of the mouth was two inches and an half long, strong, hard, triangular, as in the rest of this kind. Above the Nostrils a hard wrinkle is produced beyond the middle of the Bill. That part of the Bill which is below the wrinkle is white, the rest black. The Tongue, when extended, is of a very great length. It can shoot it out and draw it back at pleasure, which is common to it with the rest of this kind. Its Nostrils are round, covered with reflected hairs: Its Head very great. The *Irides* of the Eyes are of a pale yellow.

The colour of the whole body is black, excepting the crown of the head, which down to the Nostrils is of a lovely red or Vermilion colour.

The number of flag-feathers in each Wing is nineteen, of which the fifth and sixth are the longest; the Sarcel or pinion feather is very short, and not greater than those of the second row.

The Tail is made up of ten feathers, of which the outmost are the shortest, the rest on both sides gradually longer to the two middlemost, which are the longest of all. All but the outmost (which as we said are the least and shortest) are stiff, sharp-pointed, bending inward, about seven inches long, upon which in climbing trees they lean and support their bodies.

The Legs on the forepart are feathered down half way, behind no longer than the knees. The Feet are of a lead colour, It hath two back toes, as the rest of its kind: The Claws strong and great, except that of the lesser back-toe, which is very small.

The Gall of a dark green: The Testicles yellowish: The Guts seventeen inches long, great and lax: The stomach also lax and membranaceous, full of Hexapods and Ants. It altogether wants the *Appendices* or blind Guts, as the rest of this Tribe.

This Bird we found in the Market at *Ralsbourg* in *Germany* to be sold, killed not far from that City. It is not found in *England* that we know of.

§. II.

The green Woodpecker, or Woodpiter, called also the Rain-fowl, High-hot, and Hew-hole.

THE Cock weighed six ounces three quarters. Its length from the Bill to the Toes was eleven inches, to the end of the Tail thirteen and an half. The Wings extended were equal to twenty one inches and an half. The Bill from the point to the Angles of the mouth was almost two inches long, black, hard, strong, triangular, ending in a blunt point. A reddish dusky circle immediately encompasses the Pupil of the Eye; the rest of the *Iris* being white. The Tongue when stretched out is of a very great length, ending in a sharp, bony substance, rough underneath, wherewith, as with a Dart, it strikes Insects. The top of the Head is of a Crimson or Vermilion colour, spotted with black. The Eyes are encompassed with black, under the black on each side is another Vermilion spot. The Throat, Breast and Belly are of a pale green: The Back, Neck, and lesser rows of covert feathers of the Wings green: The Rump of a pale yellow or straw-colour, as *Aldrovandus* rightly expresses it. The feathers under the Tail are crossed with transverse dusky lines.

In each Wing are nineteen prime feathers, beside the outmost (which is very short) of a dusky colour, and marked with semicircular white spots. But more particularly, the outer Webs of the *interiour flags are green, the inner Webs dusky, with * Those next semicircular white spots: The outer Webs of the exteriour flags dusky, and painted with

with white spots, the inner Webs of the same colour with the precedent. The feathers covering the roots of the flags underneath are of a pale green, with transverse dusky lines. The Tail consists of ten feathers, stiff, and bending inwards, which by reason the shaft reacheth not to the end of the Webs, seem to be forked. The two middlemost feathers are the longest, by measure four inches and an half, have their tips black, else they are marked with cross bars, above of a dark green, and underneath whitish, the three next on each side differ not from these. Of the two outmost (which are blunter than the rest) the greater are all over varied with transverse bars of black and dark green alternately placed, the lesser or outmost have their tops green, and bottoms black.

The Feet and Toes are of a pale green, and sometimes of a lead colour: The Claws dusky. The Toes placed as in the rest of this kind, two forward, two backward. The lowest bones of the fore toes are joined together.

It hath a large Gall, an Inch and half long: The right Testicle round, the left oblong, and bent almost into a circle, which left any one should think accidental, I observed in three several birds. It hath no blind Guts, but in their stead the straight Gut is dilated in that place. Its Crop was full of Ants and Ants Eggs. It feeds also upon Caterpillars and *Coffi*. It sits more upon the ground than other Woodpeckers, and seeks its food there.

Its Tongue is round, ending in a stiff, sharp, bony tip, dented on both sides. This Tongue the Bird can dart out to a great length, viz. some three or four inches, and draw up again, by the help of two small round Cartilages, fastened into the fore-mentioned bony tip, and running along the length of the Tongue: These Cartilages from the root of the Tongue take a circuit beyond the Ears, and being reflected backwards to the crown of the Head, (where they both meet again, and are kept down by a Ligament going over them) make a large bow. Below the Ligament they run down the Sagittal Suture, and then declining a little to the right side, pass just above the orbit of the right Eye, and along the right side of the Bill into a hole excavated there, whence they have their rise or original. The muscular spongy flesh of the Tongue encloses these Cartilages like a sheath, and is so made that it may be extended or contracted like a Worm. That part also of these Cartilages, reaching from the hind part of the Head to the end of the Bill, is covered with the like muscular flesh that may be contracted or extended like the Tongue, only both Cartilages are not enclosed in one muscle, but have each its several distinct muscular sheath, like two small strings or worms. On the ends of these Cartilages (for I could without much force draw them out of their socket in the Bill) there was a white glutinous or mucous matter. On the inside the flexure of these Cartilages reaching from the root of the Tongue to the top of the Head, was a broad thin muscle, which served to move the Cartilages to and fro. For by contracting it self it straightens the bow of the Cartilages (almost after the manner as the *Tunica Uveæ* dilates the Pupil) and so necessarily forces the Cartilages forward through the Tongue, and thrusts out the Tongue: But we leave these things to be more curiously weighed and examined by others.

The tips of the shafts of the Tail-feathers in this and other Woodpeckers seem to be broken or worn off by their resting upon them in climbing.

This kind lays five or six Eggs at once. I have seen six young ones together in a Nest.

* *Bellonius his greatest green Woodpecker.*

Bellonius makes this Bird (which he would have to be *Aristotle's* third kind of Woodpecker) far greater than the common green Woodpecker now described. He gives him a crooked Bill, contrary to the manner of the rest of this Tribe: Feet after the fashion of others: Divers spots in the Wings, such as are seen in the Wings of the rest, but different in colour.

§. III.

The greater spotted Woodpecker or Witwall, Picus varius major; Πικρα Αιψ.

It is as big or bigger than a Blackbird. The Female weighed two ounces three quarters. Its length from the Bill to the Claws was eight inches, to the end of the Tail nine and an half: the distance between the tips of the Wings extended sixteens inches.

The Bill in the Cock was an inch and a quarter long, measuring from the tip to the corner of the slit of the mouth, straight, black, thicker at the head, and slenderer by degrees, ending in a sharp point, being of a triangular Pyramidal figure, and channelled with a furrow or two. The Nostrils round and covered with black bristles. The Irides of the Eyes red. The Tongue made like that of the green Woodpecker.

On the hind part of the Head is a line of Crimson or Vermilion red, reaching from white to white in each cheek; [in the Cock, not in the Hen.] In the Hen the Throat and Breast were of a dirty yellowish white: The lower Belly under the Tail of a lovely red or Crimson colour. Hence the *Italians* call it *Cul rosso*, the *Welsh* by a name signifying *Fire-tail*. The feathers encompassing the Base of the upper ^{* *Phœnicea*} *Chap*, and those about the Eyes and Ears are white. The Head is black, with a dash of shining green, the Back also black. At the insertion of the Wings on each side is a great white spot. From the corners of the mouth a broad, black stroak reaches or runs to the Back: just below the Head another black stroak crosses this.

The flag-feathers of the Wing are in number twenty (of which the first or outmost is the shortest) black, and marked with semicircular white spots. The interior covert feathers of the Wings are white, and make up part of those white spots we mentioned on the shoulders; the middlemost are wholly black, the exterior have one or two white spots. The ridge or Base of the Wing is white.

The Tail is three inches and an half long, made up of ten feathers; of which the two middlemost are the longest, being strong, stiff, sharp-pointed, and bending inwards: The shaft, as in others, is not produced to the utmost tip (perchance worn or broken off with climbing) by reason whereof the feathers appear forked. The outmost Tail-feather on each side is small, black, and having a white spot in the exterior Web. In the two next the lower part is black, and the rest white, with two transverse black spots or stroaks, of which the upper cuts both Webs of the feather, the lower only the interior. In the third the black reacheth higher, and the white part hath only one transverse black stroak. The fourth pair are all black, having only a semicircular spot of white toward the top, the very tip being of a reddish white: The two middlemost are wholly black.

Annot. I think it is not needful so scrupulously to describe every particular spot in each feather: for that nature takes a latitude, sporting her self, as they call it, in these lesser things, not observing always the same number, figure, and situation of spots. In the Bird I described, the flag-feathers of the Wings were spotted on both sides the shaft with white spots, which when the Wing was extended stood in rows crossing the feathers: The four middle feathers of the Tail wholly black, the rest variegated with white and black transverse spots. The feathers stand so that the Tail, when shut, seems a little forked.

The Feet are of a lead colour. It hath the Toes so situated as the others of this kind, viz. two forward, two backward: The two fore-toes likewise connected from the divarication place to the first joint.

It hath a small Liver with a Gall annexed. The Breast-bone is very long, produced almost to the vent: A small Gizzard or stomach, in that we distended full of * *Coffi*, *Spondyli*, and Beetles. The Guts lie deep within the body, that they be not hurt when the Bird turns her head downward, and strikes trees with her Bill. It is common to this, with the rest of its kind, to want the blind Guts.

* A great Insect with six feet, resembling a Caterpillar found in rotten wood.

§. IV.

The lesser spotted Woodpecker or Hickwall, Picus varius minor.

THis is for shape and colour like to the last described, but much less, weighing scarce an ounce; being in length from Bill to Tail not more than six inches; though the Wings extended were no less than eleven inches broad from tip to tip.

The Tail consisted of ten feathers, from the exterior to the middlemost gradually longer each than other, the two middlemost being the longest. Of these the four middlemost are wholly black, strong, sharp, and bending inward, as in the rest of this kind, so made to sustain the body when the climbs trees: The three exterior are less sharp, of which the outmost and least hath the bottom black, and the upper part white, with two transverse black spots. In the next the black part is extended in the inner Web as far as the second transverse black spot; in the outer the white reacheth lower, yet hath it only one transverse black spot toward the top. The third is black, having only the tip white.

The Throat, Breast, and Belly are of a fordid white, above the Nostrils it is of a dusky colour, and on the head it hath a white spot. The hinder part of the head is black. From the Eyes to the middle of the Neck two broad lines of white feathers terminated on both sides with black are produced, concurring about the middle of the Neck [only the feathers that cover the Ears are of the same colour with the Breast.] The upper part of the Back, and upper covert feathers of the Wings are black. The prime feathers and rest of the covert feathers are elegantly spotted with white semicircular spots. The middle part of the Back is white with cross lines of black. The Bill, Tongue, Irides, Feet and Toes like those of the last described. The Legs feathered, but not down to the Toes: The Claws black and crooked. The same number of prime feathers in Wings and Tail. The Stomach dissected was full of Insects.

It wants the Appendices or blind Guts, like the rest of this kind.

The Cock differs from the Hen in that instead of a white spot on the head is hath one of a lovely red or Crimson.

Aldrovandus writes, that this kind wants those red spots on the Head and Rump; which is true of the Female, but not of the Male, for his Head, as we said, is marked with a red spot.

§. V.

* *The Brazilian parti-coloured Woodpecker, called Ipecu, Merggrave.*

THis Bird is about the bigness of a Dove. The length of the Neck was two inches, of the body four, of the Tail also four, of the Legs almost an inch and half. It hath four Toes in its Feet, two standing forwards, and two backwards, as in *Parrots*. The Head is covered with feathers of a Vermilion colour, on which also it hath a Crest like a Dove. The Neck underneath is black to the very Bill, as also above: But in both sides there is a broad white line produced toward the Back [divisum.] The Wings are outwardly all over black, inwardly white: The Tail black. In the Belly and upper part of the Legs the feathers are black and white. Its Bill is straight, sharp-pointed, an inch and half long, wherewith it pierces the barks of trees, as the *Woodpecker*.

§. VI.

The Wryneck: Iynx five Torquilla.

THis Bird is of the bigness of the common *Lark*, or somewhat less: It weighs more than an ounce. Its length from the tip of the Bill to the end of the Tail seven inches and an half: The breadth of the Wings spread eleven inches. The Bill is short, smaller, and less triangular than in the rest of this kind, of a lead-colour. The Tongue round, ending in a sharp bony thorn, which it can dart out to a great length, and withdraw again, like the rest of this kind. The Irides of the Eyes of a yellow hazel colour. The Feet and Legs short, of a pale lead colour [or, as I described them of a flesh colour.]

It

It could ruffle up the feathers of its Head, so as to make them appear like a Crest, as doth the *Jay*. The Plumage is so elegantly and curiously coloured, that it is very difficult in words to describe it; the upper part of the body being variegated with white, black, reddish, dusky, and grey or ash-colour. From the crown of the Head all along the middle of the Back runs a list of black. The Head is cinereous, with transverse white, black, and red lines: The Throat and lower Belly yellow with transverse black lines; the middle of the Breast is whiter, with fewer lines. The feathers covering the bottom of the prime Wing-feathers are yellow, with transverse black lines. The Rump is more ash-coloured than the Head, with white spots and transverse black lines.

The prime Wing-feathers are in number nineteen, the first or outmost being something shorter than the second, black, but spotted with great red spots; which spots, especially in the feathers next the body, are powdered with small, black specks. The tips of the second row of Wing-feathers are white. The Tail-feathers are ten, not sharp-pointed, nor stiff, nor bending inwards, as in the above described *Woodpeckers*; two inches and an half long, of a cinereous colour, crossed at large intervals with bars of black: To speak exactly, the part next the cross bars is of a dark ash-colour, the rest of the intermediate spaces of a paler cinereous, sprinkled, and as it were bedewed with black specks.

The Toes are so disposed as in the rest of this kind, two forward, two backward: The outmost Toes in each Foot are equal, and twice so long as the inmost.

It wants the blind Guts like the rest of this kind. The length of the Guts was nine inches.

It strangely and ridiculously turns its head back to its shoulders, whence it is by *Gaza* called *Torquilla*. It feeds upon *Ants*, which darting out its Tongue it flaps through with great celerity, with the thorny point we mentioned (as Children are wont to catch Frogs with an Iron Dart, shot out of a Bow, and drawn back again) and so swallows them, never touching them with its Bill, as other birds are wont to do their meat: Witness *Gesner*, who tells us, that himself kept one five days in a Cage, and affirms upon his own experience that it feeds upon no other food but *Ants*.

The Hen is paler and more cinereous than the Cock. *Aldrovandus* observed a long black spot behind the Eyes in the Cock.

Annot. I described this Bird thus. The Quills or prime feathers in each Wing were eighteen, of a dusky colour, marked in their exterior Webs with red spots, in their interior with pale ones: so situate as in the pied *Woodpecker*. The Throat and upper part of the Breast were yellow, and the Belly white, from Bill to Tail variegated with thick-set, cross black lines. At each corner of the mouth grew white feathers, varied with the like transverse lines.

§. VII.

* *The Brazilian Jacamaciri of Merggrave.*

FOR the conformity of its Feet we have subjoined it to the *Woodpeckers*. It is of the bigness of a *Lark*. It hath a straight, sharp-pointed, black Bill, almost two inches long: A short Tongue, [wherein it differs from *Woodpeckers*] blue Eyes; short Wings, which end a little beneath the rife of the Tail. The Tail is almost three inches and an half long, straight, composed of seven or eight feathers. The upper Legs are feathered, the lower bare, the skin being of a colour mingled of yellow and green; of which colour are also the Feet. In each foot it hath four Toes, two standing forwards, and two backwards; both the inner Toes in each Foot, as well the fore as the back one, are but half so long as the outer. The Claws are black. The whole Head, upper part of the Neck, Back, Wings, and Tail above are of a green colour mingled with golden or igneous, so that they shine wonderfully. A ring of the same colour doth also encompass the Neck. Under the Throat, on the Breast, the lower Belly, and under the Tail it is of a dark yellow colour, like yellow Wax.

§. VIII.

* *The Braslian Curucui of Marggrave.*

It is a very elegant and beautiful bird, almost of the bigness of a *Pie*: Hath a short broadish Bill, of a brimston colour: A wide mouth, and, when open, or a triangular figure: Fair blue eyes with a golden circle [I suppose he means encompassing the Pupil] and under each Eye a spot of white skin, like a Hen: In the Eye-lids above and beneath black, stiff hairs: The Neck not long: The Legs short and feathered almost to the Feet, with black feathers. It hath a Tail five inches and an half long, of a good breadth. Under the lower Bill, in the middle, and at both sides, is as it were a beard, made up of black bristles, yet shining with a gloss of blue as in the Necks of *Mallards*. Under the Throat the feathers are only black. The whole Breast and lower Belly are of an excellent Vermilion colour: The whole Back and upper side of the Tail are of a shining green, with a gloss of blue, and golden, or igneous colour. The end of the Tail hath a black border. Underneath the Tail it hath white feathers elegantly frayed with cross black lines. The beginning of the Wings is of that shining green we mentioned: The middle part is hoary, the black feathers being powdered with very little grey specks, as *Mallards* use to be: The utmost part, that is, the longest feathers, are of a dark dusky or blackish colour. The Legs, as I said, are almost wholly clothed with black feathers: What is bare, together with the Feet, is of a dusky ash-colour. The Toes are so disposed as the *Parrots*. The feathers under the Wings are grey.

§. IX.

* *Guira acangata of the Brasilians, Marggrav.*

This Bird is about the bigness of a *Magpie*. It hath a Bill an inch long, the upper Chap whereof is a little hooked, the whole of a dark yellow: The Eyes Crystalline, with a dusky circle: The Neck two inches long, the body three. The Tail very long, viz. eight inches, consisting of eight straight feathers. The upper Legs are an inch and half long, as also the lower. The Toes in each foot four, standing as in *Parrots*, the two inward in each foot being shorter, the two outward longer. The whole Head is clothed with feathers, which in their middles longways near the shaft are dusky, in their sides yellow, as is the Crest. The Neck and Wings (on the other side) have their feathers yellow in the middle, and dusky in the sides. The ends of the Wings are almost wholly dusky. The whole Belly, Back, excepting the Wings, upper Legs, and rife or base of the Wings to three inches and an half length, are covered with feathers of a pale yellow. The end of the Tail hath white feathers, the rest of the Tail is dusky. The lower Legs and Feet are of a * Sea-water-colour. On the Head are long feathers erected like a Crest. It makes a great cry in the Woods.

* Sea-green we call it.

§. X.

* *The Braslian Aracari of Marggrav. the other Xochitenacatl of Nieremberg.*

It is of the bigness of a *Woodpecker* [I suppose he means the common green one] hath a Bill four inches long, an inch and half broad or deep, three inches and an half thick where thickest, [I suppose he means so much by measure round] a little bending downward like a *Turkish* Scymitar, and sharp-pointed like a *Parrot*; the upper Chap being a little longer than the lower: Both upper and lower are for above half way reckoning from the end, serrate or toothed. The upper part of the Bill is greater than the lower. The Bill is hollow, very light, [lighter than a Sponge:] The upper Chap white, distinguished by a black line running along the middle or ridge from head to point, the lower Chap wholly black. The whole Bill is inserted into the Head triangle-wise, and where the insertion is, compassed about with a triangular white line. It hath a Tongue four inches long, very light, and plainly resembling a feather to see to: Or else is feathered and black, (if the Tongue may be said to have a feather.) It hath a Head not very big, broad, and compressed; great Eyes,

with

with a black Pupil, yellow *Irides*, and the * rest of the outides of the Eyes black. * *Reliquae ex-terminatae.* The Neck is not longer than a *Parrot*. The body from the rife of the Neck to the Tail is about five inches long. The Tail is broad like a *Woodpecker*, and six inches long, or somewhat more. The Legs and Feet are of a dark green or black, like to those of *Parrots*, having two fore-toes, whereof the one longer than the other, and two back-toes likewise of unequal length. The Claws crooked, and dusky or black. The length of the upper Legs is two inches, of the lower one and an half. The whole Head and Neck as far as the beginning of the Breast are covered with black feathers, which where they end are terminated in a circle. The Breast, and all the lower Belly elegantly clothed with yellow feathers mingled with pavonine. Cross the Breast from the one side to the other is a broad line drawn, of a fanguine colour. The whole Back, Wings, Tail, and upper Legs are covered with dark green feathers, [or black with a gloss of green] like the colour usual in our *Magpies*. The end of the Back above the beginning of the Tail is of a fanguine colour to more than the Circumference of a Crown piece. The Wings end at the rife of the Tail, and within side are of a dark ash-colour. The Bill is black within. This Bird doth, as it were, pronounce its own name, crying with a sharp voice, but not very shrill, *Aracari*.

This Bird is very like the *Toucan* or *Braslian Pie*. The conformation of its Feet argues it to belong to the *Woodpecker-kind*. We saw the Bill of this Bird in the *Repository* of the *Royal Society, London*, our selves also have one of them: It is much less than the *Toucans* Bill, not so compressed side-ways, but rounder. The upper Chap wholly white, without any line of black in the top, (wherein it differs from the *Aracari's* Bill described by *Marggrave*) the lower black.

§. XI.

* *The yellow blue-footed Persian Woodpecker of Aldrovandus.*

This Bird communicated to me by *Tartaglinus the Venetian*, (who shewed me many exotic Animals painted) at first sight, from the constitution of the Bill and Feet I judged to be of the *Woodpecker-kind*. In bigness it differs little or nothing from the green *Woodpecker*; only it hath a thicker Head and Neck, and a longer Bill. The feathers from the middle of the Crown to the end of the Tail have something of ferrugineous: But the Bill is altogether ferrugineous. The Feet are of a pale blue. The Claws are black: The rest of the body is yellow, save that all the Wing-feathers ends or tips incline somewhat to ferrugineous; and that a spot of the same colour encompasses the Eyes. He said it was an exotic Bird, and bred in *Persia*.

§. XII.

* *The American Hang-nest, called by the Brasilians Guira tangeima. Marggrav.*

It is a Bird somewhat bigger than a *Lark*, equal to the spotted *Woodpecker*. Its body is about three inches long; Its Neck an inch and half: The Head is small, the Bill straight, sharp-pointed, an inch long. Its Legs and Feet are like those of other birds, its Tail straight, four inches long. The colour of its Bill is black, except the lower part, where it is inserted, which hath something of dusky: The Head and Neck, as low as the beginning of the Breast, very black. The upper part of the Neck from the Head almost to the beginning of the Back is of a * Sky-colour. Through the beginning of the Back it hath a transverse black spot, reaching as far as the Wings: But the Wings themselves are of a deep black, only in the middle they have a white spot situate longways the feathers, of an inch and half long. The Tail also is wholly black: The rest of the body is of a Sky-colour. The Legs are bluish: The Pupil of the Eyes black, with a yellowish white *Iris*. These Birds build admirable Nests of a cylindrical figure, and hang them in great numbers on the ends of the boughs and twigs of trees. These Nests are made of the small Fibres of roots and twigs of trees and herbs, curiously platted and interwoven.

* *aranea coloris.*

§. XIII.

§. XIII.

The Braslian Jupujuba or Japu of Marggrave.

THIS is of the same figure with the precedent, and builds after the same manner, in the same tree [one of these is a Male, the other a Female] but hath somewhat a shorter Tail. The whole body is invested with very black feathers. In the middle of each Wing it hath a yellow spot, an inch long: In the end of the Back, and near the vent it is all yellow. [I have seen also that were wholly black, with their Backs of a sanguine colour.] The Tail below from its rise half way is yellow, the other half being black; above it is wholly black, only it hath on both sides a feather half yellow. The Legs and Feet are black: The Bill of a Brimstone-colour. The Eyes of a Sapphire colour, with a black Pupil. It hath a blue Tongue, cleft or doubled at the top. Near the house of the Owner of the Engine *Tapucurai* is planted the tree *Uti*, in which hang more than four hundred Nests of these Birds; of which there are there a very great number, which hatch and bring up three broods of young in a year. Each Nest is made of dry grass and horse-hair, or hogs bristles mingled, of a dusky colour, of the figure of a narrow Cucurbit with its Alembick, long, in the whole about a foot and half, and from the bottom for one foot upwards hollow like a Purle, the remaining or upper part of it for half a foot being solid, and hanging by its tip on the tip of a little branch of the tree. All these Nests hang down on this fashion from the tips of the twigs of trees.

We have often seen the Nest of this Bird artificially built kept among other rarities in the Cabinets of the curious. I persuade myself that this was the very Bird, which the Ancients understood by the name of *Picus nidum suspensens*, i. e. the Hang-nest-Woodpecker. I am sure there is a great deal more reason why this should be so called, than the *Oriolus*, which *Aldrovandus* takes to be the *Picus nidum suspensens*. *Antonius Pisafeta* writes, that Parrots do on this fashion hang their Nests on the extremities of the branches of trees; falsely imagining that the Nests which he saw hanging on the twigs of trees were Parrots Nests.

CHAP. VI.

Of Woodpeckers less properly so called.

§. I.

The Nuthatch or Nutjobber, Sitta seu Picus cinereus.

IT is somewhat less than a *Chaffinch*. The Cock weighed almost an ounce. Its length from the tip of the Bill to the end of the Tail was five inches three quarters, to the end of the Toes six inches.

The Bill was straight, triangular, black above, underneath toward the Throat white, almost an inch long, measuring from the tip to the Angles of the slit of the mouth. The Tongue broad, not longer than the mouth, horny at the end and jagged: The Nostrils round, and covered with small bristles. The Head, Neck, and Back of an ash-colour: The sides under the Wings red: The Throat and Breast of a pale yellow [or rather Chestnut-red.] The lower Belly under the Tail hath some red feathers with white tips. From the Bill through the Eyes to the Neck is extended a long black streak: The Chin is white.

The number of flag-feathers is nineteen, of the which the first is very short and little. The interior, or those next the body, have their Webs cinereous; the exterior dusky: The shafts of all are black. The Wings underneath are marked with a double spot, the one white at the roots of the exterior quills, the other black and larger, beginning at the insertion of the bastard-wing.

The Tail is short, scarce two inches, made up of twelve feathers, all of equal length, unless the outmost be somewhat the shorter, not sharp-pointed, nor stiff as in *Woodpeckers*, but flexible and limber: The two middlemost cinereous; the two next to them black with cinereous tips; the two succeeding have the inside of their tips white,

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the outside cinereous. The outmost have their tips of a dark ash-colour, and under that a transverse white spot, the rest of the feathers being black.

The Legs are short; both Legs and Feet of a dark flesh-colour. It hath but one back-toe, equal to the middle of the fore-toes. The Claws are great, crooked, and of a dusky colour; that of the back-toe the biggest. The outmost fore-toe the least: Both outmost and inmost joined to the middle toe at the bottom.

It had a mulcous Stomach or Gizzard, in which we found Beetles; short blind Guts. The length of the Guts was six inches and an half.

It builds in the holes of trees, and if the entrance be too big, it doth artificially stop up part of it with clay, leaving only a small hole for it self to pass in and out by.

It feeds not only upon Insects, but also upon Nut-kernels. It is a pretty spectacle to see her fetch a Nut out of her hoard, place it fast in a chink, and then standing above it, with its head downwards, striking it with all its force, breaks the shell, and catches up the Kernel.

This bird is by *Aristotle* called *Sitta*, who makes two kinds of it, a greater, and a lesser. *Gaza* retains the same name, calling it in *Latine*, *Sitta*. Later Writers stile it *Picus cinereus*, i. e. the ash-coloured Woodpecker; because like them it climbs and runs up the bodies and boughs of trees. It is called by some *Sitta*, and *Kivaid*, because it moves and flirts up the Tail.

§. II.

* *The Wall-creeper, or Spider-catcher. Picus murarius, Aldrov. l. 12. c. 37.*

IT is somewhat bigger than a *House-Sparrow*, almost as large as a *Starc*. The colour of the whole body is best seen when the Wings are spread. It hath a long, slender, black Bill. The Head, Neck, and Back cinereous: The Breast white: The Wings partly cinereous, partly red, viz. toward the Belly: The Tail short: The long feathers of the Wings, the lower part of the Back, the Belly, and Legs, (which, after the manner of *Woodpeckers*, are short) black: The Toes long, three standing forward, and one backward, though *Belonius* attributes to it two fore-toes, and so many back ones: Wherefore it is to be suspected, that either he knew not the *Wall-creeper*, or else set forth one different from ours, which I do not believe, because the rest of the description he gives of it, agrees exactly to our Bird. Thus far *Aldrovandus*; who writes, that this Bird is frequent and obvious enough in the Territory of *Bologna*; in flying like to the *Hoopoe*, almost always shaking its Wings like that, never resting in one place. By later Writers it is called *Picus murarius*, because as *Woodpeckers* cling to trees, and hang on them, so this sticks to all Walls, especially those of Towers, and seeks Insects in their chinks: Whence in Winter-time it is often seen in Cities. It is a brisk and cheerful bird, and hath a pleasant note. It flies alone, and sometimes two in company. It builds its Nest in the holes of trees. They say it is found in England; but we have not as yet had the hap to meet with it.

§. III.

The greater Reed-Sparrow, Junco Aldrov. Cinclus Turneri.

THE Cock, which we described, was for bigness not much inferior to a *Thrush*. The Bill was great, somewhat crooked; from the tip of the Angles of the mouth, more than an inch long. The upper Chap of a dusky colour, the lower whitish. The Tongue cloven, and divided into many filaments. The inside of the mouth of a deep yellow or Saffron colour. The Nostrils are round and great: The Irides of the Eyes of a red hazel colour. Not far from the Angles of the mouth in the upper Mandible grow four or five black hairs. The Throat, Belly, and Breast are white, with a kind of yellowish tincture, more yellow about the vent: The supine or upper side of the body of a dusky yellowish colour. Above each Eye is a whitish line.

The number of prime feathers in each Wing is eighteen. The Plumage covering the roots of these feathers underneath is yellow. The Tail is three inches and a quarter long: I mean the middle feathers, for the extreme are but two and three quarters: They have a strong shaft, and are stiff like those of a *Woodpecker*.

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The Legs and Feet are great, strong and muculous, which is especially remarkable in this bird. It hath but one back-toe, which toward the root or rise of it is broad and torose. The outer fore-toe is joyned to the middlemost at the bottom.

It had a yellow Gall, large Testicles, a shorter Breast-bone than *Woodspiter*; short blind Guts: Reed-Beetles in the stomach.

It is always conversant among Reeds, and sings sweetly. It sticks to, and climbs up Reeds, as *Woodpeckers* do up trees.

The *Alcedo vocalis* of *Beilinius* seems to be the same either with this or the lesser Species; the description whereof see in *Aldrovandus*, lib. 20. cap. 62.

§. IV.

The lesser Reed-Sparrow. An *Cannearola Aldrovandus*? An *Ficedula cannabina Oline*?

It is equal to, or somewhat less than a *Redstart*. It creeps and sings among Reeds. From the tip of the Bill to the end of the Tail was five inches three quarters: From tip to tip of the Wings extended eight inches. The Bill, measuring from the point to the Angles of the mouth, was three quarters of an inch long: The lower Chap almost white, the upper blackish, the Mouth, within yellow: The Tongue cloven, and divided into filaments, the *Irides* of a hazel colour. The Back toward the Rump of a dark olive or dusky green, toward the Head more cinereous. The middle of the Breast is white; the Throat and lower Belly have a mixture of yellow. The sides are of a dirty, greenish colour.

The prime feathers of the Wings are in number eighteen, of which the second is the longest. They are of a dark brown or dusky colour, as in the *Redstart*, and other small birds. The Tail is 2½ inches long, and composed of twelve feathers. The soles of the Feet are of a greenish yellow. The outmost Toe adheres to the middlemost below, as in others. The Bill and Feet in this Bird are greater than the proportion of the rest of the body seems to require. The Female differs little or nothing from the Male.

Annot. This Bird I bought in the Market at *Florence*, where they call it *Becaccia*: which name they give to many small birds that feed fat. I suppose it is that described and figured in *Olina* by the title of *Becaccia Cannabina*. My description differs something from this of Mr. *Willughby*, but not considerably, viz. The Back was of a pale green inclining to yellow, which just above the Tail was more yellow. The feathers of the Wings and Tail were of a Mouse-dun, having their edges of the same colour with the Back. The Tail, when spread, terminated in a circular Circumference. The Breast, Belly, and Throat were white, dashed with yellow. The Bill long, straight, flat, or depressed; The lower Chap of a horn-colour, the upper more dusky, but not black: The Legs long, and of a light blue, with a little dash of yellow. The Mouth within yellow: The soles of the feet yellow.

It is common in the Low Countries among the Reeds.

Another Bird of this name, but different in kind, we shall describe afterwards.

§. V.

The Creeper. *Certhia*.

It is a very small bird, scarce bigger than the copped *Wren*. It hath a long, slender, sharp Bill, bending downwards like a Bow. The upper Chap of a dark colour, the nether white at the base, and black at the tip. The Tongue not longer than the Bill, wherein it differs from the *Woodspiter*, yet hard and stiff at the point, and sharp like a Goad. The *Irides* of the Eyes of a dark hazel colour.

The Throat, Breast, and Belly white: The Head, Back, and Wings inclining to a Fox-colour; the middle parts of the feathers being whitish. Above the Eyes on each side is a white spot. The beam-feathers of the Wings are eighteen, the first of which is very short, the fourth the longest, and by measure two ½ inches: The three outmost are dusky, the rest have white tips, and a broad white line through their middle, something inclining to fulvous. The edges of those next the body are likewise fulvous, and have white only on the exterior side of their shafts. The covert-feathers of the Wings are more black, the middlemost have their middle part fulvous; all their tips white. The Tail consists of ten feathers only, as in *Woodspiter*, is very long for the

bigness

bigness of the bird, viz. two inches and an half, sharp-pointed, stiff, of a dusky red, or reddish dun colour.

The Feet are of a light brown: The Legs short: The Feet have long Toes, all armed with very long, sharp, white Claws, especially the back-toe, which hath it extraordinarily long like a *Lark*.

It is sufficiently characterized and distinguished from all other birds by its littleness and bow-bill.

Aldrovandus attributes to his *Certhia* a short Tail, wherein it differs from ours.

It runs up the bodies and boughs of trees, having its Feet and Tail, fitly disposed and formed for such a purpose.

It is frequent in *England*; and as *Aldrovandus* reports, builds in the hollows of trees after the manner of *Woodpeckers*; It lays a great number of Eggs, sometimes, they say, not fewer than twenty.

§. VI.

The Hoop or Hoopoe, *Upupa Latinis*, Ἐποψ Γραῖς.

It weighs three ounces. Its length from the point of the Bill to the end of the Tail was twelve inches and an half: Its breadth, the Wings being stretched out, nineteen inches.

Its Bill is two inches and an half long, black, sharp, and something bending. The Tongue small, as *Aldrovandus* rightly hath it, deep withdrawn in the mouth, triangular, being broad at bottom, and sharp at top, like a perfect equilateral triangle. The shape of the body approacheth to that of a *Plover*. The Head is adorned with a most beautiful Crest, two inches high, consisting of a double row of feathers, reaching from the Bill to the nape of the Neck, all along the top of the Head: Which it can at pleasure set up, and let fall. It is made up of twenty four or twenty six feathers, some of which are longer than others; the tips of them are black; under the black they are white, the remaining part under the white being of a Chestnut, inclining to yellow. The Neck is of a pale red: The Breast white, variegated with black strokes tending downward. The older birds had no black strokes in their Breasts, but only in their sides. The Tail is four inches and an half long: [*Aldrovandus* saith six] made up of ten feathers only, black, with a cross mark or bed of white of the figure of a *Crescent* or *Parabola*, the middle being toward the Rump, the hornstoward the ends of the feathers. The Tail is extended further than the Wings complicated.

There are in each Wing eighteen quills or master-feathers, of which the ten foremost are black, having a white cross bar, which in the second, third, fourth, fifth, sixth, and seventh is more than half an inch broad. The seven following feathers have four or five white cross bars. The limbs or borders of the last are something red: The Rump is white. The long feathers springing out of the shoulders and covering the back are varied with white and black cross lines or bars, after the same manner as the Wings.

The *Irides* of the Eyes are of a hazel colour: The lower Eye-lid bigger than the upper: The Legs short: The outmost toe at bottom fastned to the middle, without any intervening membrane. The Windpipe (as *Aldrovandus* describes it) at the beginning of the divarication or division into two branches which go to the Lungs, hath two little bones outwardly supplying the use of the * *Larynx*, between which is spread a very thin skin: The annular Cartilages beyond the divarication in each branch in our observation were only semicircular, as in *Herons*.

In the Stomach dissected we found *Beetles*; whence it is manifest that it feeds upon Insects, but whether also upon Grapes and other Berries, as some of the Ancients have delivered, we know not. I hear (saith *Aldrovandus*) that among other things it feeds upon *Ants*. It hath no blind Guts.

In the number of Tail-feathers, want of the blind Guts, cross lines of the Wings, and partly also in its food it agreeth with *Woodpeckers*, to which therefore we have subjoyned it.

About *Collen* and elsewhere in *High Germany* it is very frequent, where they call it *Widchuppe*. It fits for the most part on the ground, sometimes on *Willows*. *Turner* saith, that it is found no where in *Britany*: But he is deceived; for we are assured by credible persons, that it is sometimes, though more rarely, seen in *Northumberland*, and also in *Surrey*.

U

Aristotle

* Head of the Windpipe.

Aristotle witnesseth that it makes its Nest of dung, especially mads dung, daubing it therewith instead of Clay.

It took its name in both Languages [Greek and Latine] from the sound of its voice. The most of our *English* Grammarians (saith *Turner*) call that bird *Upps*, which those that speak barbarously from the noise it makes with its Wings are wont to call *Vannellus*, and they in their own Language a *Lapwing*. This inveterate error our Grammar Schools do still retain.

They say the Hen is always greater than the Cock.

CHAP. VII.

Of Land Birds that feed upon Fish.

§. I.

The Kingfisher. Ispida an Veterum Alcyon?

IT weighed an ounce and a quarter: In length from the tip of the Bill to the end of the Tail exceeded seven inches. The ends of the Wings extended were eleven inches distant.

The Bill was almost two inches long, thick, strong, straight, sharp-pointed, black, yet whitish at the Angle [of the lower Mandible.] The upper Chap is for the most part longer than the lower, yet in some birds the lower is longer than the upper. The Tongue is short, broad, sharp-pointed, and undivided: The Mouth within of a Saffron-colour, the Nostrils oblong. The Chin is white with a certain mixture of red; the middle also of the Breast or Belly is of the like colour. The lower Belly under the Tail is of a deep red, as are also the sides and feathers under the Wings. The Breast is red, the outmost borders of the feathers being of a dirty bluish green. From the Neck through the middle of the Back to the Tail it is of a most lovely bright, but pale blue, which by its splendour is said to hurt their Eyes that look long and intently upon it. If you heed this colour attentively you may observe the blue crossed with obscure or dark-coloured lines. Between the Nostrils and the Eyes is a red spot, and another beyond the Eyes: to which succeeds a white mark, tintured with red. The crown of the Head is of a black green, with cross blue lines.

In each Wing are twenty three Quills, of which the third is the longest; both quill-feathers, and those next to them have their exterior Webs blue, their interior dusky. The lesser rows of Wing-feathers, all excepting those covering the base of the Wing, have blue tips. The long-feathers springing from the shoulders, and covering the Back, are of a bluish green. The Tail is short, about an inch and an half in length, made up of twelve feathers, of a dark blue, with somewhat of black.

The Legs and Feet are very short and little, black before, red behind, as are also the soles of the feet and the back-toes. The structure of the Feet in this Bird is singular and different from all others, for the three lower joints of the outmost toe are joyned to the middlemost; of the innermost only one: This inner toe is the least, and shorter by half than the middlemost, the outer almost equal to the middlemost: The back-toe is somewhat bigger than the inner foretoe. The third or lowest bone of the Leg is greater than is usual in other birds. The toes seem as it were joyned with many cross lines. The bones of the Tongue are lesser and shorter than in other birds.

The Stomach is great and lax, as in carnivorous birds; in that we dissected was full of the bones and scales of fishes. The Guts are slender toward the vent. *Gessner* affirms, that the fat of this bird is red; which we found to be true. The same Author tells us, that in one Nest are often found nine young ones: In a Nest in a hole about half a yard deep in the bank of a River we observed but five young ones.

It is a Vulgar persuasion, that this bird, being hung up on an untwisted thread by the Bill in any room, will turn its Breast to that quarter of the Heaven whence the wind blows: They that doubt of it may try it.

Dr. *Charleton*, in his *Onomasticon*, makes mention of another *Kingfisher* brought out of *India*, which scarce exceeds a *Wren* in bigness. We have not as yet hapned to see this Bird, neither do we remember to have elsewhere read any thing of it.

§. II.

The Brasilian Jaguacati guacu, Marggrav. akin to the Kingfisher.

IT is by the *Portugues* called *Papa peixe*, because it lives upon fish. It is equal in bigness to a *Throble* or *Mavis*: For the figure of its body like to the greater *Woodpecker*. It hath a black, straight, and sharp-pointed Bill, almost three inches long: Black Eyes, and very short black Legs: The upper Legs are in part bare of feathers. The Feet have four toes (one standing backward) of unequal length: For the two outer are short and contiguous, but the third or inner is much the shorter, and more remote. The Claws are black. The Tail is two inches long, reaching further than the ends of the Wings. The superiour feathers of the whole body, viz. the Head, Neck, Wings, and Tail, are of a rusty, but shining, colour. About the Neck it hath a ring of pure white feathers. The Throat, under side of the Neck, Breast, and Belly are also clothed with white feathers. Near both the Eyes it hath also a spot of white. In the Tail some of the feathers are sprinkled with white spots, which yet are scarce seen, unless when they spread their Wings and fly.

§. VII.

The Bee-eater, Merops five Apiafter.

FOR the shape of the body it is like the *Kingfisher*, for bigness equal to a *Blackbird*: From the tip of the Bill to the end of the Tail eleven inches and an half long; the Wings, being spread, eighteen inches broad.

The Bill is great, from the tip to the Angles of the Mouth almost two inches long, black, and for the proportion of the body very like that of a *Kingfisher*, save only that it is a little more arcuate or bending downward: The Tongue slender, deeply cut in or torn at the tip: The * *Irides* of the Eyes of a lovely red, and in some of a hazel colour.

The Head is great and oblong. The colour of the feathers at the Base of the upper Chap is a greenish blue, but in the middle between the Nostrils white. The crown of the Head red, but in some birds having something of green mixt. From the corners of the mouth through the Eyes on each side is extended a black stroak; contiguous whereto under the Chin are bright, but pale yellow feathers. The Neck and Shoulders are green, with a certain mixture of red. The whole Belly and Breast, as far as the Chin, are blue, this colour is deeper near the Chin, fainter on the Breast and Belly. In some the colour of the under side inclines more to green: Perchance these are Cocks.

The number of beam-feathers in each Wing is about twenty one or twenty two; decreasing by degrees to the tenth. All to the twentieth have black tips. The first or outmost ten beneath the black are of a bluish green: The next nine beneath the black are of a lovely Orange colour, as are also the lesser rows next to them: Those above near the ridge of the Wing are blue. The long feathers springing from the shoulders are of a pale yellow.

The Tail is near an hand-breadth long, made up of twelve feathers, of a blue colour, the exterior Webs having something of green intermixt: The under side of the Tail was of a dun colour. The two middle feathers run out in length beyond theret, and end in sharp points.

The Legs are very short, but thick for the length: Both Legs and Feet exactly like those of the *Kingfisher*. For the fore-toes, as in that, are all joyned together to the first joint, as if they were but one toe, the outmost and middle to the second or third. The Claws are black, the Feet and Toes of a dusky red.

The Liver was of a pale yellow: The Stomach rather membranous than muculous, in that we dissected filled with Beetles and other Insects. The colours of the Wings varied in several birds, in some was more blue, in some more green, in some more red, and in some less.

It is strange that *Aldrovandus* should not take any notice of, or not mention at least the connexion of the Toes in this Bird.

It is not unfrequent in the Campaign of *Rome*: For that we saw it there to be sold in the Market more than once. It is not found in *England* that we know of.

Bellonius writes, that it is so common in *Candy*, that it is seen every where in that Island.

Aristotle tells us, that it feeds upon *Bees*, whom all other Writers of the History of Animals do therein follow. But it feeds not only upon *Bees*, but also upon *Cicade*, *Beetles*, and other Insects. Yea, as *Bellonius* relates, upon the Seeds of *Nippelwort*, *Barfard Parsley*, *Turnep*, &c. not abstaining from Wheat and other grain. From its exact agreement in the shape and make of its Body, Bill, and Feet with the *Kingfisher*, we suspect that it likewise preys upon fish.

Bellonius, in the first Book of his *Observations*, writes thus concerning the *Merops*. Flying in the air it catches and preys upon *Bees*, as *Swallows* do upon flies. It flies not singly, but in flocks, and especially by the sides of those Mountains where the true Thyme grows. Its Voice is heard afar off, almost like to the whistling of a man. Its singular elegance invites the *Candy Boys* to hunt for it with *Cicade*, as they do also for those greater Swallows called *Swifts*, after this manner: bending a Pin like a hook, and tying it by the Head to the end of a thread, they thrust it through a *Cicade*, (as Boys bait a hook with a fly) holding the other end of the thread in their hand. The *Cicade* so fastned flies nevertheless in the Air, which the *Merops* spying, flies after it with all her force, and catching it, swallows Pin and all, wherewith she is caught.

§. IV.

* The other Bee-eater of *Aldrovandus*. *Merops* alter, seu *Meropi* congener *Aldrov.*

THE *Germans* call this Bird the *Sea-Swallow*, both because at first sight it seems to resemble a *Swallow*, partly in the shortness of its Legs, and partly in its flying, and also because like the *Swallow* it catches Insects as it flies. I should rather make it congenerous to the *Bee-eater* than the *Swallow*, because it differs widely from the *Sea-Swallow* [so much as to have little common with it.]

This Bird is a little longer than the precedent, and (as its picture shews) a little grosser or thicker-bodied: Its Bill is black, long, sharp-pointed, and approaching somewhat more to the figure of a *Sithe* than in that. The Head, Neck, Breast, and almost the whole Belly yellow. From the bill it hath a great black spot, which is carried on backwards through the Eyes to the beginning of the Neck. The Back is of a Chestnut colour, but mingled with green and yellow. The Wing-feathers are painted with divers colours: For the first [the uppermost] are blue, the second mixt of blue and yellow, the third altogether yellow; the fourth, *viz.* the prime or beam-feathers black, with red tips. The upper part of the Tail is of a bright green, the lower of a very fair yellow, so that it seems to be half green, half yellow. It hath yellow Feet and black Claws.

§. V.

* The *Brazilian* *Guira guainumbi* of *Marggrave*, of kin to the *Merops*.

IT is a Bird to see to of the bigness of a *Pigeon*, because it is thick and deep-feathered, but the bulk of the body, the feathers plucked off, is indeed no bigger than that of a *Thrush*. It hath a head somewhat bigger than a *Throffle*; a black Bill about two inches long, the upper Chap whereof is a little longer than the nether: Both upper and nether Chap are on both sides toothed like a Saw. It hath short Legs, not much exceeding an inch in length, for colour black: Four Toes in each Foot, one situate backward, three forwards, as is ordinary: But the first or innermost foretoe is shorter, the middlemost longest, and the third again short, but not of equal rise with the rest: For the rise of the first is from the middle of the foot, and also of the second; but the rise or beginning of the third is near the third joint of the middlemost: The first hath three joints, the second four, the third again three, the back-toe but two. The Claws are black, and bending downwards. The Tail is very long, straight, consisting of a few straight feathers, about an inch broad, but ten inches long: Indeed only two feathers make up the end of the Tail, which for two inches have naked shafts, and again have their ends web'd for two inches. The whole body is about six inches long. The feathers very beautiful: *viz.* on their Head they have as it were a Mitre or Crown of Sapphire-coloured feathers, which near the rise of the Bill resemble the

the colour of the *Throffle* stone: In the middle of this Mitre is seen a black spot of the bigness of a Gros of *Misina*. Beneath the Eyes (which are yellow with a black Pupill) it hath also black feathers mingled with Sapphire-coloured. The Throat, and the whole Breast and Belly are of a dark yellow. The upper part of the Neck, the whole Back, Wings, and Tail are of a green or grass colour, but wherewith a Sea-green is mixt, as in the Necks of *Mahards* and *Peacocks*. From the Knees to the Belly the upper Legs are covered with green feathers. In the middle of the Neck underneath it bears as it were a badge of three or four black feathers, and about them Sapphire ones, which make a kind of spot or mark.

This Bird for the like constitution of its Feet, and some agreement in colour, we have subjoined to the *Merops*.

§. VI.

The *Water-Onzel* or *Water-Crake*: *Merula aquatica*.

THIS Bird is well nigh as big as the common *Blackbird*: Weighs two ounces and an half; is in length from the tip of the Bill to the end of the Tail eight inches and an half, to the end of the Claws nine: In breadth between the tips of the Wings stretch out twelve inches and an half.

It hath a shorter body than the *Blackbird*, and a thicker Neck. Its Bill is straight, sharp-pointed, slenderer than a *Blackbird's*, measuring from the point to the Angles of the mouth about an inch long, or somewhat less, black-coloured.

The Head and upper side of the Neck are of a dark, dusky colour, or black with an eye of red. All the Back, and both prime and covert-feathers of the Wings are particulary of cinereous and black, the middle parts of the feathers being black, the edges blue. The under side of the Neck and forepart of the Breast are milk white: The feathers contiguous to the white are reddish: The lower Belly towards the Tail black. The Eyelids white round about.

It hath in each Wing eighteen quills. The Tail is shorter than in the rest of this kind [that is, *Merula*] scarce two inches and an half long, composed of twelve feathers of equal length. The Legs, Feet, and Claws are black: The outmost foretoe at bottom joyned to the middlemost. The Tongue is black, slender, and a little cloven at the tip. The circles encompassing the Pupils of the Eyes great, broad, and of a fair hazel colour. The Eyes are furnished with nictating membranes. The Nostrils are long. The Plumage covering the whole body thick-set, as in water-birds.

It frequents stony Rivers and Water-courses in the Mountainous parts of *Wales*, *Northumberland*, *Westmoreland*, *Yorkshire*, &c. That I [J. R.] described was shot beside the River *Rivelin* near *Sheffield* in *Yorkshire*: That Mr. *Willughby* described near *Pentambath* in *Denbighshire*, in *North-Wales*. It is common in the *Alps* in *Switzerland*; where they call it *Wasser-Anxel*.

It feeds upon fish, yet refuseth not Insects. Sitting on the banks of Rivers it now and then flirts up its Tail. Although it be not Web-footed, yet will it sometimes dive or dart it self quite under water. It is a solitary Bird, companying only with its Mate in coupling and breeding time.

CHAP. VIII.

The greatest Land-birds, of a peculiar kind by themselves, which by reason of the bulk of their bodies, and smallness of their Wings cannot fly, but only walk.

§. I.

The *Ostrich*: *Struthiocamelus*.

WHAT occurs in Ancient and Modern Writers concerning this Bird see in *Gesner* and *Aldrovandus*.

It is the greatest of all birds, except perchance the *Emeu*, which though it be not so tall, yet in bulk of body is well nigh equal to it. Mr. *Willughby* saith, it is either equal or bigger, but I think that, if either have advantage of other in magnitude,

tude, it is the *Ostrich*. When it holds up its Head it approacheth to the height of two Yards. *Pliny* writes, that it exceeds the height of a horseman sitting on horseback: Which is to be understood when it stretches its Neck forth, and reaches upwards as high as it can. The Head is small, depressed or flat-crown'd, and (as *Aldrovandus* truly) like a *Goose*: The Bill also is compressed, and compared with the body very small, of a triangular figure, and horn colour, the tip being black. The skin at the Nostrils ends in a femicircle. The slit of the mouth is large, reaching so far that its extremes or Angles lie directly under the Eyes. The Eyes are great, with hazel-coloured *Irides*. Of all great birds this alone hath both Eye-lids [upper and lower] as *Pliny* witnesseth. Which whether it be true or not we leave to be examined by others that have opportunity of seeing the bird. The Head and Neck, almost as far as the Breast, are bare of feathers, as are also the Thighs. The Head and Neck are covered with a certain Down, or thin-set hairs instead of feathers. The sides under the Wings, and the Thighs are absolutely bare. The lower part of the Neck where the feathers begin is white. The Wings are small, and altogether unuseful for flying, designed by Nature only to assist the bird in running, being spread and moved. The feathers of the Back in the Cock are coal-black, in the Hen only dusky, so soft that they resemble a kind of Wool. The Wing-feathers are of the same colour [with the Back] beneath, but above in their upper part purely white. The Tail is thick, bushy, and round, not as in other Birds, to be spread out in breadth, the component feathers in the Cock being whitish, in the Hen dusky, with white tops; which feathers are in great request for Souldiers Hats, Helmets, &c.

Its Neck and Legs are very long: It hath but two toes, wanting the back-toe and inmost foretoe. The outer toe in that we described was five inches and an half long, the other eight: The length of the whole Foot from the end of the heel eleven Inches. The longer Toe was covered with twenty four great, disjoyned, annular scales. This Toe is armed with a great, strong, black Claw; the other or outer Toe had no Claw in the Bird we described. The Toes are connected with a thick, strong membrane as far as the first joyn.

It swallows Iron, Leather, Grafts, Bread, Hair, and whatever else you offer it, promiscuously: Howbeit it doth not concoct Iron and other hardthings, but avoids them entire by sieg. That we saw at *Bruxels* was usually fed with bread mixt with hair. *Africa* produces this bird; in the Desarts whereof are sometimes seen such multitudes of them in company, that to them that behold them afar off they seem to be Troops or Armies of horsemen. They are also found abundantly in *Arabia*; and not less plentifully in *America*, but of a different kind; as will appear by and by.

They lay very great Eggs, viz. sometimes as big as a young Childs head, and of fifteen pound weight, covered with a very hard and stony shell, which being buried in the sand, are cherished only by the heat of the Sun till the Young be excluded. For the Writers of Natural History do generally agree, that the old birds after they have layed and covered their Eggs in the sand forsake them, and take no more care of them.

That *Ostrich*-feathers were much used by the Ancients for the adorning of Caps, Helmets, &c. is manifest by the testimony of *Pliny*: And that still they retain their esteem, being also used now adays for the same purposes every body knows. They were also formerly wont to be employed, not only in *Italy*, but in *England*, for to make Fans for Gentlemen, to cool themselves withal in the Summer time.

§. II.

* The American *Ostrich*, called *Nhanduguacu* by the *Brazilians*, *Marggrav*.

His fort is somewhat less than the *African*: Their Legs are long, the lower about a foot and half, the upper a foot. They have three Toes in each foot, armed with thick, black, but not sharp Claws. One Toe standing backward, which is round and grofs; so that they can hardly walk on a smooth or boarded floor, but easily slip and fall. They carry their Necks bending like a *Swan* or *Stork*, being about two foot in length. Their Heads are like those of *Geese*. They have fair black Eyes: A compressed or flat Bill, not very broad, two inches and an half long. They have little Wings, unfit for flight, one of which they spread and set up like a sail, to assist them in running, which they do with that speed and swiftness, that a good Greyhound can hardly overtake them. Their whole body is covered with grey feathers, which

which are longer and more beautiful on the Back. The body with the feathers appears almost round. They have not such a Tail made up of gratted feathers, as is represented commonly in the Pictures of *Ostriches*; but the feathers are stretched forth along the Back even to the vent. It swallows bits of Iron, Brass-money, Dice, or any the like things you offer it, but concocts them not, casting them out again by sieg. It feeds on fruits and flesh. It is frequent in the fields of the * *Capitania* of *Serigippo*, and the *Capitania* of *Rio grande*. In *Fernambuco* it is not found. Its flesh is good to eat.

§. III.

The *Cassamary* or *Emeu* of *Aldrovandus*, *Clusius*, *Nierembergius*, *Bontius* and *Wormius*.

WE have seen four birds of this kind at *London*; three Males, and one Female: viz. one Male among his Majesty's birds kept in *St. James's Park* near *Westminster*; two Males and a Female at *Mr. Maydons*, an *East-India* Merchant in *Newgate-Market*, brought out of the *East Indies*. It hath a horny Crown on the top of the Head. The Head and Neck are bare of feathers, only thin-set with a hairy down. The skin is of a purplish blue colour, excepting the lower part of the backside of the Neck, which is red, [or of a Vermilion colour.] In the lower part of the Neck hand down two Wattles or Lobes of flesh as low as the Breast. It hath a very wide mouth. The Bill is near four inches long, of a moderate thickness and straight. The Legs are thick, and strong. It hath three Toes in each foot, all standing forward, for it wants the back-toe. The Claw of the outmost Toe is much longer than the rest. It hath some rudiments of Wings rather than Wings, consisting of only five naked shafts of feathers, somewhat like *Porcupines* quills, having either no Webs and feather parts, or which were in the Bird we described broken and worn off. It hath no Tail; a great body invested with blackish or dusky feathers, of a rare texture, which to one that beholds the Bird at a distance seem rather to be hairs than feathers. It is a gentle-natured bird, and easily made tame. We shall give the Reader a more full and accurate description of all its parts out of *Clusius* his *Exotics*. This Bird (saith he) as it walked, holding up its head, exceeded the height of four foot by some inches: For the Neck from the top of the Head to the beginning of the Back was almost thirteen inches long; the body two foot over; the Thighs with the Legs to the bending of the Feet seventeen inches long. The length of the body it self from the Breast to the Rump was almost three foot. The feathers covering the whole body, with those on the lower part of the Neck next to the Breast and Belly, and the Thighs were all double, two coming out of the same small short pipe or hole, and lying the one upon the other; the upper being somewhat the thicker or groffer, the nether the more fine and delicate: They are also of a different length, as I observed in the case of the like Bird. For those on the lower part of the Neck were shorter; those on the middle of the body and sides longer (viz. of six or seven inches:) But those on the extreme or hind-part of the body about the Rump (for it wanted the Tail) nine inches long, and harder than the rest. Although they are all hard or stiff, yet are they not broad but narrow, with thin-set filaments opposite one to another on each side; of a black colour, but about the Thighs tending to cinereous, the shaft only remaining black, as in the rest. These feathers had that forward situation, that to those that beheld the Bird afar off, its skin might well be thought to be covered not with feathers, but only with hairs, seeming like to a *Bear*; and to want Wings; though indeed it had Wings, lying hid under the feathers covering the sides, furnished with * four greater feathers of a black colour, as I observed in the case, though they were so broken at the tops, that I could determine nothing certainly concerning their length. But their broken shafts were pretty thick, hard and solid, and ran deep down into the outmost part of the Wing. The upper part of the Wing next the body had its covert feathers like those on the Breast. For it is to be thought, that this kind of Wings are given to this Bird to assist her and promote her speed in running: For I believe she cannot fly, nor raise herself from the earth: [He might have been more positive in this, for it is most certain.] The Legs in compass exceeded five inches, and were covered with many as it were barks or broad scales, especially above the bending of the foot. It had thick, hard Feet, divided into three thick Toes, on the upper part covered with scales, underneath altogether callous: The middle (which was longer than the rest) consisted of three joyns, the interior of one, the exterior

* We observed five shafts of feathers in each Wing.

of two. The Claws of all were very great, almost two inches long, thick, hard, and horny. The Head was small for the bigness of the bird, and almost bald or smooth, of a dark Purple colour, together with the upper part of the Neck, in which appeared thin-set, black hairs. The Eyes a little above the slit of the Bill, great, and fiery, almost like to those of Lions, compassed with black hairs, as are also those small, open Ear-holes which it had behind the Eyes. The upper Chap of the Bill was as it were arched or bent like a Bow, a little above the point perforate with two holes, serving for Nostrils; from the middle whereof, reaching to the top of the Head, arises a kind of towering Diadem or Crown, of a horny substance, near three inches high, of a dusky yellow colour; which, as I understood, falls off at moulting time, and grows up again with the new feathers. The nether Chap of the Bill from the * slit to the utmost point was five inches long. The fore-part of the Neck, almost four inches below the Bill, had as it were two membranous Wattles hanging down like a beard, two inches long, of a red Vermilion colour. The back-part of the Neck was likewise destitute of feathers, from the Head all along, being also of a red Vermilion colour: The lower part was covered with some few red feathers, wherewith black ones were intermingled.

This Bird, although it seem to have some marks common with the *Ostrich*, as a small Head, almost bald; and that without choice it swallows whatever you offer it; yet hath it not feet divided into two Toes like them, but into three, wanting the back-toe, after the manner of the *Bustards*: And therefore so firm and strong, that I have seen a tree of the bigness of a mans thigh wholly crushed, and its bark taken away (as its Master told me) by the Feet and Claws of this bird. For it was not wont to assault those with whom it fought, with its Bill, running forward; but turning it self obliquely or sideways, to strike backward with its Feet.

But although it devoured indifferently whatever was offered, as *Oranges* entire, and the like, yet its ordinary food was white bread, which it swallowed divided into great lumps or morsels. But I was informed, that it was especially delighted with new-laid Hens Eggs, which it swallowed whole together with the shell. But if it were not in perfect health, it avoided them again entire, and then swallowing them anew the second time, it retained and concocted them. Moreover they affirmed to me, that this bird was a Cock, and that it was sometimes seen to put forth a penis from behind like a *Camel*. An Egg of this bird, the greatest and fairest among many that I saw, being measured longways was fifteen inches in circuit, cross-ways but twelve, or a little more: So that for its bigness it might be employed and used for a vessel, as well as an *Ostriches*, which, (as *Pliny* testifies) the Ancients did sometimes use, and our Age also still doth for that purpose. For I remember that I have more than once seen *Ostriches* Eggs, tipped with, and set in Silver, made use of for drinking Cups. Howbeit the Shell of this Birds Egg was not very thick nor white, like the Shells of *Ostriches* Eggs, but in the outside of a greenish ash-colour, adorned with continuous, at least very thick-set small protuberances of a deep green. Of the rest which I saw one was almost of the same bigness, form, and colour with that described; but some were more round, others lesser; the colour also of some was more dilute, and less elegant. Moreover, it was told me, that this sort of Bird is not peculiar to the *Molucca* Islands, but found also in *Sumatra* or *Taprobane*, and the neighbouring Continent to those Islands. Thus far *Cladius*.

The Hen is much less than the Cock, of a dark Olive or dusky colour. It seems to be a miracle in nature (saith *Aldrovandus*, who borrowed his description out of the Journal of a *Holland Voyage*) that this bird wants a Tongue. Whatever it eats it swallows. This is not so very wonderful; for we know other Birds besides this which want the Tongue, as for example, The *Pelican*, &c. Whatever other Authors have concerning the *Emu*, as far as I have read, is all transcribed out of *Cladius*: Excepting *Dr. Harvey*, who doth briefly describe this Bird from ocular inspection; adding, that it swallows even live coals: And I have observed a Cut of it in the Tables of birds set out by *Visscher*, with this Inscription, *Avi ignem devorans; i. e.* The Bird that eats or devours fire.

§. IV.

The Dodo, called by *Cladius* *Gallus gallinaceus peregrinus*, by *Nieremberg* *Cygnus cucullatus*, by *Bontius* *Dronce*.

This Exotic Bird, found by the *Hollanders* in the Island called * *Cygnæa* or *Cerme* by the *Portugues*, *Mauritius* Island by the *Low Dutch*, of thirty miles compass, famous especially for black Ebony, did equal or exceed a *Swan* in bigness, but was of a far different shape: For its Head was great, covered as it were with a certain membrane resembling a hood: Beside, its Bill was not flat and broad, but thick and long; of a yellowish colour next the Head, the point being black: The upper Chap was hooked; in the nether had a bluish spot in the middle between the yellow and black part. They reported that it is covered with thin and short feathers, and wants Wings, instead whereof it hath only four or five long, black feathers; that the hinder part of the body is very fat and fleshy, wherein for the Tail were four or five small curled feathers, twirled up together, of an ash-colour. Its Legs are thick rather than long, whose upper part, as far as the knee, is covered with black feathers; the lower part, together with the Feet, of a yellowish colour: Its Feet divided into four toes, three (and those the longer) standing forward, the fourth and shortest backward; all furnished with black Claws. After I had composed and writ down the History of this Bird with as much diligence and faithfulness as I could, I happened to see in the house of *Peter Pamins*, primary Professor of Physic in the University of *Leiden*, a Leg thereof cut off at the knee, lately brought over out of *Mauritius* his Island. It was not very long, from the knee to the bending of the foot being but little more than four inches; but of a great thickness, so that it was almost four inches in compass, and covered with thick-set scales, on the upper side broader, and of a yellowish colour, on the under [or backside of the Leg] lesser and dusky. The upper side of the Toes was also covered with broad scales, the under side wholly callous. The Toes were short for so thick a Leg: For the length of the greatest or middlemost Toe to the nail did not much exceed two inches, that of the other Toe next to it scarce came up to two inches: The back-toe fell something short of an inch and half: But the Claws of all were thick, hard, black, less than an inch long; but that of the back-toe longer than the rest, exceeding an inch. The Mariners in their dialect gave this bird the name of *Walghvogel*, that is, a nauseous, or yellowish bird: Partly because after long boyling its flesh became not tender, but continued hard, and of a difficult concoction; excepting the Breast and Gizzard, which they found to be of no bad relish; partly because they could easily get many *Turtle-Doves*, which were much more delicate and pleasant to the Palate. Wherefore it was no wonder that in comparison of those they despised this, and said they could well be content to be without it. Moreover they said, that they found certain stones in its Gizzard: And no wonder, for all other birds as well as these swallow stones, to assist them in grinding their meat. Thus far *Cladius*.

* *Bontius* writes, that this Bird is for bigness of mean size, between an *Ostrich* and a *Turkey*, from which it partly differs in shape, and partly agrees with them, especially with the *African Ostriches*, if you consider the Rump, quils, and feathers: So that it shews like a Pigmy among them, if you regard the shortness of its Legs. It hath a great, ill-favoured Head, covered with a kind of membrane resembling a hood: Great, black Eyes, a bending, prominent, thick Neck: An extraordinary long, strong, bluish white Bill, only the ends of each Mandible are of a different colour, that of the upper black, that of the nether yellowish, both sharp-pointed and crooked. It gapes huge wide, as being naturally very voracious. Its body is fat, round, covered with soft, grey feathers, after the manner of an *Ostrich*: In each side instead of hard Wing-feathers or quils, it is furnished with small soft-feathered Wings, of a yellowish ash-colour; and behind the Rump, instead of a Tail, is adorned with five small curled feathers of the same colour. It hath yellow Legs, thick, but very short; four Toes in each foot, solid, long, as it were scaly, armed with strong, black Claws. It is a slow-paced and stupid bird, and which easily becomes a prey to the Fowlers. The flesh, especially of the Breast, is fat, succulent, and so copious, that three or four *Dodos* will sometimes suffice to fill an hundred *Scamens* bellies. If they be old, or not well boyled, they are of difficult concoction, and are salted and stored up for provision of victual. There are found in their stomachs stones of an ash-colour of divers figures and magnitudes; yet not bred there as the common people and Seamen fancy,

* I suppose he means from the corners of the slit of the mouth.

* That is the *Swan* Island.

* Hist. Natur. & Medic. Ind. Orient. lib. 5. cap. 17.

brooding them under his Wings, with as much care and tenderness as their Dams are wont to do. And we were told, that he was trained and induced to perform this office, almost after the same manner that *Jo. Baptista Porta* prescribes, *lib. 4. Magia Nat. cap. 26.* First, they make him very tame, so as to take meat out of ones hand, then about Evening-time pluck the feathers off his breast, and rub the bare skin with Nettles, and then put the Chickens to him, which presently run under his breast and belly, and (it is likely) rubbing his breast gently with their heads allay the stinging and itching of the Nettles; and then they do for two or three nights, till he begin to love and delight in the Chickens. Perchance also the querulous voice of the Chickens may be pleasant to him in misery, and invite him to succour the miserable. A Capon once accustomed to this service will not give it over, but when one brood is grown up, you may take them away, and put another to him of newly hatch Chickens, and he shall be as kind to them, and take as much care of them as of the former, and so others, till all being grown up or removed, he hath been for some time idle and disused the employment.

It might be infinite should I prosecute at large all that might be said of this bird, or write a full, exact, and particular History of it. If any Reader desires to know more of it, let him consult *Aldrovandus*, whose design was, to omit nothing in his History which was either known to himself, or had been before published by others.

This same Author in his *Ornithology* gives us many kinds, or rather rarities, of Hens. 1. A common Hen, but white and copped, *lib. 14. cap. 2.* 2. A dwarf Hen, or short-legged Hen: Which variety is also found in *England*, kept by the curious, and called *Grigs*. 3. A *Padua* Cock and Hen: Which ought rather to be called a *Pulverara* Cock and Hen; from *Pulverara* a Village some miles distant from *Padua*, where they are found. These are larger and fairer Fowl than the common sort, else differ in no particular: Whence also if they be removed into other Countries, they do by degrees degenerate, and in a short time [in some few generations] come to be of the size and shape of the Natives of such places. 4. A rough-footed Cock and Hen, *lib. 14. cap. 5.* 5. A *Turkish* Cock and Hen, different from ours especially in the variety and beauty of their colours, *cap. 6.* 6. A *Persian* Cock and Hen, whose characteristic is the wanting of a Rump or Tail. This kind is also kept by some among us, and called *Runkins*. The first five varieties, in my opinion, differ not specifically. For these Birds by reason of the difference of Climate, soil, food, and other accidents, vary infinitely in colours, differ also in bigness, and in having or wanting tufts on their heads, &c. Those birds which he describes and gives figures of in the tenth and eleventh Chapters, under the titles of *Another Indian Cock and Hen*, and in the twelfth Chapter under the title of *two other Indian Hens*, are the same with the *Mitu* and *Mituporanga* of *Marggravius*, of which we shall give an account §. IV.

The Wool-bearing Hen I take to be altogether fabulous, and its figure in *Aldrov. lib. 14. cap. 14.* taken out of a certain Map, fictitious. Perchance it was no other than the frilled or *Frisland* Hen, which *Odoricus de Foro Julii* and *Sir John Mandevill* call the Wool-bearing Hen. The birds which *M. Paulus Venetus* makes mention of in these words, *In the City Quelimu, in the Kingdom of Mangi are found Hens, which instead of feathers have hairs like Cats, of a black colour, and lay very good Eggs, seem to be Cassowaries.*

Besides those set forth by *Aldrovandus*, we have often seen, and our selves also have now at *Middleton* another kind or variety of Hen, called in *English* the *Frisland* Hen, not (as I suppose) because it was first brought to us out of *Frisland*, but because the feathers of the body are curled or frilled: By which Epithete I believe this Bird was at first called, the word being afterward by the mistake of the Vulgar corrupted into *Frisland*, of like sound. For knowing this to be an outlandish Hen, they thought it could not be more fitly denominated than from its Country, and thereupon imagined it to be called a *Frisland* Hen, instead of a frilled Hen. Nor did they want a probable argument to induce them to think it to be of a *Frisland* breed or original, viz. the curling of the feathers, which one would be apt to attribute to the horror of cold. I suppose this to be the same bird which *Aldrovandus* hath put in the Chapter of monstrous Hens, in the last place, whose figure he saith was sent him by *Pompilius Tagliasserus* of *Parma*, with this description. *I would have you to understand, that there are two things especially found in this Cock worthy of admiration. The first and chief is, that the feathers of its Wings have a contrary situation to those of other birds, for that side which in others is naturally undermost or inmost, in this is turned outward, so that the whole Wing seems to be inverted:*

inverted: The other is, that the feathers of the Neck are reflected towards the head like a crest or ruff, which way the whole Tail also turns up.

A Hen cut aunder in the middle (in this case they prefer a black one) and applied hot to the head, in the phrenic, headach, &c. usually helps, and gives ease: They say also, that used in like manner, it heals the bitings of venomous beasts. Laid upon Carbuncles it draws out the venom; nor must we omit, that it stanches the bleeding of green wounds. A live Hen [or Cock] plucked about the Fundament, and so applied to Pilefential swellings called *Bubones*, draws out the venom.

1. The Jelly of an old Hen, made of a Hen cut with Calves feet, and Sheeps feet, or Beef, boiled six or seven hours in a close vessel, to which you may add Spices, or Cordial waters, is a great strengthener and nourisher.

2. Cock-Ale is made of Hensflesh, boiled till the flesh falls from the bones, then it is beaten with the bones, and strained for Wine or Ale with Spices. Note: The flesh of Hens is better than that of Cocks, except Capons. The flesh of a black Hen, that hath not laid, is accounted better and lighter.

3. Cock-brath is thus made: Tire an old Cock till he fall with weariness, then kill and pluck him, and gut him, and stuff him with proper Physic, and boil him till all the flesh falls off, then strain it. This broth mollifies, and by means of the nitrous parts wherewith that decrepitate Animal is endued, and which are exalted by that tiring of him, cuts and cleanseeth, and moves the belly, the rather if you boil therein purging Medicines. It is famous for easing the pains of the Colic (boiled with purgers and discutients) good against a Cough and Tartar of the Lungs (boiled with breast herbs.)

4. The Brain thickens and stops fluxes, as that of the belly (taken in Wine.) Women anoint therewith the gums of Children, to makethem breed teeth.

5. The inward tunicle of the stomach, dried in the Sun, and powdered binds and strengthens the stomach, stops vomiting and fluxes, and breaks the stone.

6. The Stones are said wonderfully to restore strength after sickness, and to yield prolific seed, to provoke and increase lust (taken fresh) and to cure Fevers.

7. The Gall takes off spots from the skin, and is good for the Eyes.

8. The Grease of Hen or Capon is hot, moist, and softning, between the Goose and Hogs grease, and abounds Acrimony, cures chapt lips, pains in the Ears and pulities in the Eyes.

9. The Weefand of a Cock, burt and not consumed, given before Supper, cures pissing of bed. *Solenand. f. 4. Conf. 11.*

10. The Dung doth all the same that the Pigeons, but weaker: and besides, cures the Colic and pain of the Womb. Moreover, it is good especially against the Jaundise, Stone, and suppression of Urine.

Note. The white part of the Dung is esteemed the best. Give half a drachm Morning and Evening for four or five days. *Merret. Pharmac. Ref. c. 21.*

Outwardly it dries running heads, and other scabs (the ashes sprinkled on.)

The yellow dung cures the Ulcers of the Bladder, fried in fresh Butter or Oyl olive, and cast into cold water, to let the filth settle, that the Oyl may swim, which * is to be cast into the Yard.

11. The Eggs are used, the Shells, Membranes, Whites, Yolks.

The Shells break the Stone, and cut tartarous muilage.

The membranes are diuretic, given inwardly, or outwardly applied, (and are laid on the prepuce of infants.)

The White cools, binds, and conglutinates. It is of frequent use in the redness of the Eyes, and for healing of wounds (with bole) and fractures, &c.

Note. Hippocrates gives three or four Whites in Fevers to cool and cleanse.

The Yolk is Anodyne, ripens, digests, loosens, and is very much used in Clysters. Moreover, mingled with a little Salt it is wont to be laid on Childrens Navels (in a Walnut shell) to give a stool.

There is an Oyl made of it, which is of frequent use in consolidating and closing up wounds, and chaps, and the ripening of tumors.

The Physical diet of a Hen and its parts.

* The Oyl thus impregnate.

§. II.

A Peacock, Pavo, Taxus.

THIS Bird is so well known every where, and so sufficiently characterized by the length and glorious eye-like spots of his Tail alone, that it may perchance seem superfluous to bestow many words on describing of it. I shall therefore only present the Reader with *Aldrovandus* his description.

In the Cock (saith he) the Head, Neck, and beginning of the Breast are of a deep blue. The Head in proportion to the body little, and (as *Albertus* notes) in a manner Serpentine, adorned with two oblong white spots, the one above the Eyes, the other, (which is the lesser, but much the thicker) under them, which is also succeeded by a black one; else, as I said, blue. It hath a tuft on the top of its head, not entire, as in some other birds, but consisting of a kind of naked, but very tender, green stalks or shafts of feathers, bearing on their tops as it were Lily-flowers of the same colour. Of which most beautiful tuft or crest thus *Pliny*, *Pavonis apicem crinitæ arbusculæ constituunt*: And indeed they seem not to be feathers, but the tender shoots of Plants newly put forth. The Bill is whitish and * slit wide, being a little crooked at the tip, as it is in almost all granivorous birds, and in it wide Nodhrils: The Neck long, and for the bigness of the Fowl very slender. The Back of a pale ash-colour, besprinkled with many transverse black spots. The Wings closed (for spread I cannot see them, who describe it painted by the life) above towards the Back are black, lower towards the Belly and within side red. The Tail is so disposed, that it is as it were divided into two. For when he spreads it round, certain lesser feathers making as it were an entire Tail by themselves, and being of another, to wit, a dusky colour, do not stand up like those long ones, but are seen extended as in other birds: So that without doubt the longer must needs be inserted into another muscle, by help whereof they are so erected and spread. These long feathers, (as *Bellonius* writes) spring out of the upper part of the Back near the vent, that is, out of the Rump: And those other lesser ones are made by Nature to support the longer. The Rump is of a deep green, which together with the Tail it crests; the feathers whereof are short, and so disposed, that they do as it were imitate the scales of an *Ethiopian* Dragon, and cover and take away the sight of part of the long feathers of the Tail. The longer feathers are all of a Chestnut colour, beautified with most elegant gold lines tending upward, but ending in tips of a very deep green, and those forked like *Swallows* Tails. The circular spots, or (as *Pliny* calls them) the eyes of the feathers, are particoloured of a deep green, shining like a Chrysolite, a Gold and Sapphire colour. For those Eyes consist of four circles of different colours, the first a golden, the second a chestnut, the third a green: The fourth or middle place is taken up by a blue or Sapphire coloured spot, almost of the figure and bigness of a Kidney-bean. The Hips, Legs and Feet are of an ash-colour besprinkled with black spots, and armed with spurs after the manner of *Dunghil-Cocks*. The Belly near the Stomach is of a bluish green, near the vent it is black, or at least of a dusky colour.

In the *Peachen* there is little variety of colours. The whole Wings, Back, Belly, Thighs and Legs are of a dusky colour, inclining to cinereous. The Crown of the Head and Crest are of the same colour; yet in the top of the Head are some small spots, as it were points of green dispersed. Those white spots we noted in the Cock are in the Hen far greater. The circle encompassing the Pupil of the Eye in the Cock is yellow, in this of a lead-colour. The Chin is wholly white. The feathers of the Neck are waved and green; near the Breast they have their extremities white.

Their Food is the same with that of the common Cock and Hen: But they do especially delight in Barley. *Albertus* saith, that *Peacocks* eat Serpents, whence it is no wonder that Serpents should be terrified with their voice. That they were originally exotic birds, and of oldtime brought out of *India* into *Europe* is most probable, though now adays they are every where very frequent.

It is proper to this Bird only, the *Turkey* excepted, to crest his Tail, and spread it round, as if he delighted and took pride to have the glittering Eyes thereof beheld: But that he doth it upon being commended, and that so soon as he casts down his Eyes and sets the deformity of his Feet, out of shame he presently lets fall and contracts his Tail, as if he were not altogether devoid of reason, is without doubt false and fabulous.

Its

Its flesh is esteemed harder, colder, drier, and of more difficult concoction than that of Hens. That being boiled or roast it will not putrefie, but keep a year or more uncorrupt, is commonly believed, and proved by an experiment made by *St. Anguſtine*, who in his 21. Book of the *City of God*, Chap. 2. writes thus: *Who but God the Creator of all things gave to Peacocks flesh a faculty of not putrefying: Which thing at first hearing seemed to me incredible, it hapned that at Carthage there was set before us a roasted Peacock, of the brawn of whose breast we caused to be kept so much as we thought convenient: Which being produced after so many days space as any other roasted flesh would corrupt in, did not at all offend our Nose. Being laid up again, after more than thirty days it was found the same as before, and likewise the same after a year, save that it was somewhat drier, and a little contracted or shrunk.* To us it seems not so wonderful that the flesh of a Peacock, which is of it self sufficiently hard and solid, being rendered harder and drier by roasting should continue a long time uncorrupted in a hot Country, such as *Africa* is, especially if care be taken, that in moist and rainy weather it take no wet, but be kept always dry; and I doubt not but the same would happen to *Turkeys* flesh, or even to *Pullets* flesh boiled or roasted. Let them abstain (saith *Aldrov.*) from eating *Peacocks* flesh who live a sedentary or idle life, using no exercise: For it is more agreeable, or at least less hurtful to those that exercise much, [I mean the flesh of young *Peacocks* only, as being more tender] but to those that are liver-grown, or troubled with the Spleen, or with the Piles very noxious. But in my opinion, and to my Palate the flesh of young *Peacocks* is very tender, delicate, and well tasted, purely white, and deservedly had by the *Romans* of old in high esteem, and price, nothing inferior to that of *Hens* or *Partridge*.

Aristotle writes, that *Peacocks* lay twelve Eggs, but with us they seldom lay more than five or six before they fit.

They are pestilent things in Gardens, doing a world of mischief: They also throw down the Tiles, and pluck off the Thatch of houses. The *Peacock* (saith *Aldrovandus*) though he be a most beautiful bird to behold, yet that pleasure of the Eyes is compensated with many an ungrateful stroke upon the Ears, which are often afflicted with the odious noise of his horrid, or, as he calls it, * hellish cry. Whence by the common people in *Italy* it is said to have the feathers of an Angel, but the voice of a Devil, and the guts of a Thief. It is said (and I can easily believe it) to produce its life to an hundred years. The *Peacock*, saith *Columnella*, is no less salacious than the *Dunghil-Cock*, and therefore requires five Hens: Yea, if there be no other Female for him to couple withal he will run upon and tread the sitting Hen, and break her Eggs, whereof he being conscious, endeavours as much as she can to hide her Nest from him. This bird is said to love cleanliness. It sometimes varies in colour, being found white, especially in Northern Countries.

* Tartareous voice.

§. III.

The Turkey. Gallopavo, five Meleagris & Numidia avis.

THE *Turkey* being now so well known, and become so common every where in *Europe*, needs no very minute and operose description, wherefore we shall content our selves with that of *Peter Gyllius*, sufficiently exact of it self, and made up and perfected by *Aldrovandus*, by the addition of whatsoever worthy the observation was by him omitted; which runs thus:

It is as tall as a *Peacock*. Its Neck together with its Head is altogether bare of feathers, and only covered with a purplish-coloured skin; so very thick, that when it cries, or prides it self, it so stretches, and as it were blows up the skin, that before hung loose and flabby, that it approaches to the bigness of a mans arm. The Crown of the Head is particoloured of white, blue, and purple. It hath no Crest or Comb like a Cock, but a certain red, * fleshy Appendix, arising above the upper Chap of the Bill, which is sometimes extended to that length, that it not only reaches all along the declivity of the upper Chap, but hangs down below the tip of the Bill at least an inch, so that the Bill is covered with it, that it cannot be seen but sideways. This Appendix when it walks or feeds it contracts to that shortness, that whereas before it hung down an inch lower than the Bill, now being shrunk up it falls short of the length of the Bill it self. The feathers of this bird do somewhat resemble a *Hawks*, and have their ends white. It hath very long Legs. Its Toes and Claws have the same distinction and figure with the *Dunghil-Cock*. The body of that I saw was round, and

* Worm-like Caruncle.

taller

* The slit of the mouth he means.

taller than a *Peacocks*. Round about the Eyes it was of a florid blue and purple colour. The Eyes themselves were indued with a very quick and sharp sight, like those of *Hawks*. The Cock when any one came near the Hen, bristled up his feathers, and by his super gate, strutting up towards him, endeavoured to drive him away. The Hen was white, and resembled a *Peacock* when he hath cast the feathers of his Tail. Thus far *Gyllius*: In which description, faith *Aldrovandus*, are two notes of no small moment wanting: *viz.* That its Legs * want Spurs, and that the Cock is differenced from the Hen, when they are come to their full growth and maturity, by a bristly bush or beard before his Throat, or in the upper part of his Breast: Add hereto, that the worm-like Caruncle on the Head is in the Hen very small. What he saith of their feathers being like *Hawks*, is to be understood by reason of their many spots, wherein the likenels consists.

* In our observation they want not spurs, though they have indeed but short and blunt ones.

To this we may further add, that the Tail of a *Turkey* is made up of eighteen feathers; that each Wing hath twenty eight prime feathers or quills: That the Legs have small Spurs, or rather certain rudiments of Spurs, and those very conspicuous and plain to be seen, however *Aldrovandus* writes that they do altogether want Spurs. Their Eggs are white, but thick-speckled with fordid yellowish red spots, much like to the freckles of the face of a man.

This stately Fowl at first sight from the shape of its body, and also from its conditions, one would take to be rather of the *Hen* than the *Peacock* kind, faith *Aldrovandus*: To me it seems to be more like the *Peacock* than the common *Cock*, in its bigness and stature or tallness, in the manner of carrying its Tail, but especially of setting it up and spreading it, as if both it self admired it, and took pride in shewing it to others.

That these birds were the *Meleagrides* of the Ancients, as also their *Galline Africanae* & *Numidica guttata*, *Aldrovandus* takes much pains to prove. In *English* they are called *Turkeys*, because they are thought to have been first brought to us out of *Turkey*.

Turkeys love hot Countries: yet they can bear cold ones well enough, after they are grown up and have been used to them: But their young Chickens are very neth and tender, and not to be reared without great care and attendance.

" Their flesh is very white and delicate, a dish becoming a Princes feast, faith *Aldrovandus*, if it be well concocted yielding a plentiful and firm nourishment; of " the same taste and quality with that of a *Peacock*, and as difficult to concoct, unless " its hardness be before by some means corrected. This is to be understood of old and well grown *Turkeys*, for *Turkey-pouts* and young *Turkeys* are tender enough, and of easie concoction.

The antipathy this Fowl hath against a red colour, so as to be much moved and provoked at the sight thereof, is very strange and admirable.

§. IV.

The Brazilian Mitu or Mutu of *Marggrave*.

THIS Bird, faith *Marggrave*, is of the *Pheasant* kind; the *Spaniards* also (as *Nierenbergius* tells us) call it a *Pheasant*. But we, partly for its bigness, partly for its colour, partly also for its gentle nature, easily becoming tame, but chiefly for that it spreads its Tail in like manner * circularly, think that it ought rather to be ranked with the *Peacock* and *Turkey*, to which we have therefore subjoined it. It is bigger than the common *Cock* or *Hen*. The length of its body from the Neck to the rife of the Tail is ten inches: The length of the Neck six inches. It is all over covered with black feathers, except on the Belly and under the Tail, where it is of a brown colour, almost like that of a *Partridge*. The feathers on the Head, Neck, and Breast are finer than the rest, and for softness and beauty comparable to black Velvet. On the top of the Head it hath black feathers complicated into a very low and flat cop, which one that carelessly beheld the Bird would scarce take notice of, but when it is angry, or on other occasions it can erect them into a conspicuous crest. It hath a remarkable Bill, not thick, crooked, about an inch and half long: The lower Chap is small, the upper almost four times bigger. The Bill is of a very bright carnation colour, but toward the tip white. Its * Legs are like a *Hen*, ten inches long, to wit, four from the Feet to the Knees, and six above them, where they are covered with black feathers. It hath also four Toes, like a *Hen*, which from their rife to the first joyned are connected by an inter-

* If I understand *Marggrave* aright.

* Under this word he comprehends also the thighs.

venient skin, as in some other birds. It hath a Tail a foot long, like a *Turkey*, which it always moves in breadth; crying *Kit Kit* like them: A well-shaped Head like a *Goose*; a Neck about six inches long, as was before said: Brave, great black Eyes; and behind the Ears a white naked spot like a *Hen*. It is easily made tame; it roots willingly on high upon trees like *Turkeys*. Finally, it hath very good and savoury flesh.

The Pauxi of *Nierenberg*, the Indian Hen of *Aldrovandus*, lib. 4. cap. 12. a variety of the *Mitu*.

It was (faith *Nierenberg* out of *Fr. Hernandez*) of the bigness of a *Dunghil-Cock*, or something bigger: Its feathers were of a black colour, but shining, and almost like a *Peacock*: Its Bill red, crooked, and like a *Parrot*, &c. What was most remarkable in, and peculiar to this Bird was a certain tumour fastened to the root of its Bill, where it was more slender, of the shape of a Pear, of the hardness of a stone, and of a blue colour, like that of the stone called *Cyanus* or the *Turcois*.

Aldrovandus describes his * Indian Hen, from a Picture, as I suppose, in this wise. From the Bill to the end of the Tail (which was white, and striped with black lines) it was black, which blackness yet did every where incline to blue. The vent and beginning of the Tail underneath were white. Its Bill was strong, crooked, and red. Its Legs were almost of the same colour, but much paler, and in their hind part inclining to blue. The Claws were black. It carried on its forehead a great protuberance, of the shape of a Fig, and of a bluish colour. The Tail was long, not erect, as in our common *Cocks* and *Hens*, but extended in length, as in a *Pie*.

* Ornithol. lib. 14. cap. 12.

These birds differ not from the *Mitu* in any thing almost but that protuberance or excrescence at the beginning of the Bill. *Nierenbergius* also makes mention of this variety in his tenth Book, Chap. 75. The *Pauxi*, faith he, (for so he there calls this Bird) hath a great head, which in some is plain or smooth, in others crested; in others instead of a crest of feathers arises a stone or globular body (a stone they call it though it be not over-hard) like an Egg, or bigger, of the colour of Soder. I wonder that *Marggrave* should make no mention of this bunch: Surely it was wanting in all the birds he saw. Whether this Bird be a *Species* distinct from the *Mitu*, or only accidentally different, we refer to further inquiry.

§. V.

The other Indian Cock of *Aldrovandus*, *Mituporanga* of *Marggrave*, *Tepetototl* of *Nierenbergius*.

HERE is also found (faith *Marggrave*) another kind of * this Bird, which the *Brazilians* call *Mituporanga*, differing only in the Bill and feathers of the Head. This kind hath no long Bill, but an indifferently thick one, yet not so * high as the *Mitu*, nor so crooked: The tip of both Chaps is black, all the rest of the Bill covered with a Saffron-coloured skin; the like whereto it hath also about the Eyes. It hath goodly, black Eyes. The Head and Neck covered with feathers of a deep black, like Velvet. On the top of the Head it hath curled feathers, twisted or turning up spirally, as far as the beginning of the Neck; which it can erect in the manner of a curled or frilled crest. All the rest of the Bird is black, wherewith is here and there mingled a gloss of green. About the vent it hath white feathers. The Legs are cinereous, and of the figure of the *Mitu*'s. The Tail black, but the extremities of its feathers white. This Bird also easily becomes very tame and familiar.

* The *Mitu*.

* Or perchance deep, as the word is.

Of this Bird *Nierenbergius* * writes thus. The fawning and familiarity of * *Lib. 10. cap. 68.* Dogs doth not exceed the officiousness of the *Tepetototl* or Mountain Bird, which others call, *Teneholt*, and the *Spaniards* Natives of *America* a *Pheasant*, which is very tame and domestic: It is a bird of the bigness of a *Goose*, of a black shining colour; yet having some feathers white underneath, about the Tail, at the ends of the Wings; ash-coloured Legs and Feet; a crooked Bill, partly cinereous, and partly yellow, and about its root as it were swelling out; a folded or curled crest; black Eyes, but a pale *Iris*. It is fed with Corn, made up into a mass or loaves, and baked, and with such like meat. Its flesh is fat, and good to eat, and not unlike that of well-fed *Turkeys*. It is a very gentle Creature, and loving to man, and begs its food, when an hungry, by catching hold of the cloths of those that it lives in the house with:

Y

And

And when it hath occasion to go into any Room, if the door be shut, it knocks at it with its Bill. If it can, and be permitted, it follows its Master; and when he comes home, receives him with great expression of joy and clapping its Wings.

* Lib. 14.
cap. 10.

*Aldrovandus** describes and sets forth the figure of this Bird under the title of *Another Indian Cock*. The whole body (saith he) of this Bird was of a deep black: It wanted both Spurs and Tail, as also the Comb: Instead of which it had on its Head curled feathers. Its Bill was of two colours, partly yellow, to wit, toward the Head, partly black. The upper Chap of its Bill hooked. Where in other Cocks the holes of the Nostrils are, there this Bird had a certain yellow protuberance, of the bigness of a Cherry. The Legs and Feet were covered with whitish annular scales. Also some small feathers near the vent were white.

* Tabula he
calls them.

If this Bird be rightly described by *Aldrovandus*, it seems so to differ from the *Mitoporanga* of *Marggrave*, as his *Indian Hen* above described doth from the *Mitu*, viz. by the Cherry-like protuberance on its Bill. Moreover, it differs also in that it wants a Tail, whereas the *Mitoporanga* hath a sufficient long one. But *Aldrovandus* saw not the bird it self, but only its Picture, which whether or no it were exact, and not taken when the bird had lost its Tail, there is some reason to doubt.

§. VI.

The Guiny Hen.

IT is for bigness equal to a common *Hen*: But its Neck longer and slenderer. The figure of its body almost like a *Partridge*. It is of an ash-colour, all over chequered with white spots. A black ring compasses the Neck: The Head is reddish. On the Crown or top of the Head grows a hard horny cap, [a horn Mr. *Willughby* calls it] of a dusky red colour. The Cheeks beneath the Eyes are blue, and bare of feathers, under which is a red Gill. They say, that these Birds are gregarious, and feed their Chickens in common. So far Mr. *Willughby*. But because this description is very short and succinct, (though sufficient for the knowledge of the bird) I shall present the Reader with a full and exact one out of *Gesner*. The * *Mauritanian Cock* is a very beautiful bird, in bigness and shape of body, Bill, and Foot like a *Pheasant*. [Those that we have seen, as also those described by *Belonius* and *Marggrave* were as big as ordinary Hens,] armed with a horny Crown, rising up into a point, on the backside* perpendicularly, on the fore side with a gentle ascent or declivity. Nature seems to have intended to fasten and bind it down to the lower part by three as it were * Labels or slips proceeding from it; between the Eye and the Ear on both sides one; and in the middle of the forehead one, all of the same colour with the Crown; so that it fits on the head after the same manner as the *Ducal Cap* doth upon the head of the *Duke of Venice*, if that side which now stands foremost were turned backward. This Crown below is wrinkled round about: Where it rises upright in the top of the Neck, at the hinder part of the head grow certain erect hairs (not feathers) turned the contrary way. The Eyes are wholly black, as also the Eye-lids round about, and the Eye-brows, excepting a spot in the upper and hinder part of each Eye-brow. The bottom of the Head on both sides all along is taken up by a kind of callous flesh of a sanguine colour, which that it might not hang down like Gills or Wattles, Nature hath taken care to turn backward and fold up, so that it ends in two acute processes. From this flesh arise up on both sides certain Caruncles, wherewith the Nostrils are invetled round, and the Head in the forepart separated from the Bill, which is pale-coloured; of these also at the Bill the lower edges are lightly reflected back under both Nostrils. What is between the Crown and this flesh on the right and left side is marked with a double scaly incisure, but behind with none.

Its colour under the Jaw or Throat is exactly purple, in the Neck a dark purple: In the rest of the body such as would arise from black and white fine powder, sprinkled or sifted thin upon a dusky colour, but not mingled therewith: In this colour are dispersed and thick-set all over the body oval or round white spots, above lesser, below greater, comprehended in the intervals of lines obliquely intersecting one another, as is seen in the natural position of the feathers; in the upper part of the body only, not in the lower. [I suppose he means, if we should fancy lines to be drawn in the manner of Network all over the back, the spots would stand in the middle of the Meshes of that Network.] This you may find to be so, not only from viewing the whole body, but even single feathers plucked off. For the

upper

upper feathers, in oblique lines intersecting one another, or if you please, certain circumferences, made (as I said) of black and white powder, and having their extremities joyned together as in Honey-combs or Nets, do comprehend oval or round spots in dusky spaces; but so do not the lower. * Yet both are placed in a like manner. For in some feathers they are so joyned together in order, that they do almost make acute triangles, in others so as to represent an oval figure. Of this kind there are three or four rows in each single feather, so that the lesser are contained within the greater. In the end of the Wings and in the Tail the spots stand in equidistant right lines, long ways of the feather. Between the Cock and Hen you can scarce discern, the similitude is so great; save that the Head of the Hen is all black. Its voice is a divided or interrupted whistle, not louder, nor greater than that of a *Quail*, but liker to that of a *Partridge*, except that it is * higher, and not so clear. This description was sent to *Gesner* by our Dr. *Key* [*Cajus*.]

* Or the position of both
observes a
like rule.

* Sublimior.

Marggravius saw others brought out of *Sierra Lyona* like to the above described, whose Neck was bound or lapped about with, as it were, a membranous cloth of a blue ash-colour. A round many-double tuft or crest consisting of elegant black feathers covers the Head. The white points or spots round the whole body are variegated as it were with a shade.

§. VII.

Macucagua of the Brasilians, a bird of the Hen-kind. *Marggrave*.

IT is of the bigness of our Country Hen, or bigger; hath a black Bill, more than an inch and half long, forward a little crooked, like a *Partridge*: In the middle of the Bill are two large holes for Nostrils. The Eyes are black; and behind them at a little distance are the Ears, as in Hens: The body thick and great, wherewith the Wings end, for it hath no Tail. The lower Legs are bare, two inches and an half long. It hath in its Feet three Toes standing forward, thick, with short and blunt Claws; a round heel like an *Ostrich*, and a little above that a short Toe toward the inside of the Leg, with a blunt Talon. The whole Head and Neck is speckled with a dark yellow and black: Under the Throat it is white. The Breast, Belly, and Back are of a dark ash-colour. The Wings are all over of an Umber-colour waved with black, except the prime feathers, which are wholly black. The upper Legs are clothed with feathers of the same colour with the Belly; the lower, together with the Feet, are blue: The Claws grey. It is a very fleshy bird, and hath so much flesh as scarce two ordinary Hens have, and that also well tasted. Under the outer skin, which is thick and fat, it hath another membrane wherewith the flesh is covered. It lives upon divers fruits that fall from wild trees. I found in its stomach wild Beans, the Seeds of *Araticu*, &c. It runs upon the ground; for its Feet are unfit to climb trees. It lays Eggs a little bigger than Hens Eggs, of a bluish green colour. This might have been put in the next Chapter among the wild birds.

CHAP. XI.

Wild Birds of the Poultry-kind, and first of all, the Granivorous.

§. I.

* The Pheasant. *Phasianus*.

THIS Bird is supposed to be so called from *Phasis* a River in *Colchis*, from whence it was first brought into *Europe*. *Aldrovandus*, not improbably, takes this word to be rather derived from the Hebrew פֶּשֶׁת of the same sound, and (as he supposes) signification. They differ much in weight, according as they are fatter or leaner. One Cock we made trial in weighed fifty ounces, another but forty five; a Hen thirty three. Its length from the point of the Bill to the end of the Tail was thirty six inches, to the end of the Claws twenty four. The distance between the tips of the Wings extended thirty three inches. The Bill like to that of other granivorous birds, from the tip to the angles of the mouth an inch three quarters long,

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in old birds whitish : It hath on both sides a fleshy and tuberos membrane, by which it is above joyned to the Head, under which the Nostrils are as it were hid. The Irides of the Eyes are yellow. A red or Scarlet colour [according to *Aldrovandus* powdered with black specks] compasses the Eye round for a good breadth. In the forepart of the Head, at the *Basis* of the upper Chap of the Bill, the feathers are black with a kind of purple gloss. The Crown of the Head and upper part of the Neck are tintured with a dark green, shining like silk, which colour yet is more dilute on the Crown of the Head. [*Aldrovandus* writes, that the Crown commonly is of a very elegant, shining ash-colour, at the sides and near the Bill being green, and either in Sun or shade very changeable : Which most beautiful colour doth also take up the * whole Neck above. Mr. *Willughby* makes the Crown of the Head to be of a shining blue, with a certain mixture of red, and as well the Head as the upper part of the Neck to appear sometimes blue, sometimes green.] It hath moreover on both sides the Head about the Ears feathers sticking out, which *Pliny* calls horns. There grow also to the Ears in their lower angle black feathers longer than the rest. The sides of the Neck and the Throat are of a shining purple colour. Note, that as well the green as the purple colour inheres only in the exterior part or borders of the feathers, the rest, *i.e.* the middle and lower part, of the feather being on the top of the Head dusky, on the Neck black. The feathers under the Chin, and at the angles of the Mouth are black, with green edges or borders.

Below the green the rest of the Neck, the Breast, Shoulders, middle of the Back, and sides under the Wings are clothed with most beautiful feathers, having their bottoms black, their edges tinted with a most beautiful colour, which, as it is diversely objected to the light, appears either black or purple : Next to the purple in each feather is a cross line or bed of a most splendid gold colour : Below the gold a fulvous, which reaches as low as the black bottom we mentioned. Howbeit the gold colour is not immediately contiguous to the fulvous, but divided by an intermediate narrow line of a shining purplish. On the underside of the Neck the extremities [tops] of the feathers are painted with a black spot of the figure of a *Parabola*. The shafts of all are fulvous. The feathers themselves about the shaft in the lower part of the underside of the Neck are marked with an Oval white spot in the black bottom we spoke of. The feathers on the shoulders and middle of the Back are variegated with these colours : First, their edges are fulvous, next succeeds a narrow purplish line, then a pretty broad black line running parallel to the edges of the feathers, wherein is included another broad white line : This *Aldrovandus* calls an Oval line. The space comprehended within this line, and the rest of the feather, to the very bottom, are black. Yet in the middle of the Back the space comprehended is various, of dusky or black. The shafts of the feathers are fulvous or yellow. The lower feathers of the Back are almost wholly ferrugineous, inclining to a Fox colour, want that white spot, are longer than others, and end as it were in small filaments. Yet they have this common with the fore-mentioned, that in the light, about their middles they seem to * have an appearance of that green colour, which else is not seen in them ; that their shafts approach to a gold colour, and that their bottoms or lower parts are all dusky. The Tail (if you measure the middle feathers, which are much longer than the rest) is full twenty six inches long, almost of the figure of an Organ ; for as in that the Pipes on each side are gradually longer and longer, or bigger and bigger, the biggest being the middlemost, so it is in this Tail : Those two middlemost feathers (which, as we said, are the longest of all) have on each side them eight, all of different magnitude, the exterior shorter and lesser than the interior in order to the outmost. They are of an ash-colour, on the sides ferrugineous, near the shafts adorned with black spots, in the longest feathers in both Webs, opposite one to another, in the lesser in one Web only, or if there be any mark in the interior Web it is more obscure, and scarce observable. The Wings closed are nine inches long, spread * eighteen inches broad. The Wing-feathers that are next the body are variegated with the same colours as those on the middle of the Back : The subsequent are liker those on the lower part of the Back : Yet the ridges of the Wings resemble those of the common *Partridge*, whose colour the prime feathers or quills of the Wings do almost exactly represent, *viz.* being of a dusky ash-colour, and all over spotted with whitish spots. The Breast and Belly whereabout the Gizzard lies, and that part thereof which the Wings cover glister with the same colours wherewith the Neck is beautified, but more obscure, and the feathers here are much bigger. Near the vent and on the Thighs it is of a dark ferrugineous. The Legs, Feet, Toes, and Claws

* All the upper end of the Neck.

* Call forth some flesh.

* Here is some mistake for the breadth is double of eighteen inches.

are of a horn colour ; yet the Toes and Claws are darker than the Legs. A thick membrane, and perchance not unfit for swimming, connects the Toes : The like whereto (that I know of) is not found in any other pulveratious bird. The Legs are armed with Spurs, shorter than in a *Cock*, but sharp, and of a black colour. The Hen is nothing so beautiful as the *Cock*, almost of the colour of a *Quail*.

It lives in the Woods ; and feeds upon Acorns, Berries, Grain, and Seeds of Plants. It frequents rather Coppice Woods, than where there are only Timber-trees.

The Books of all Writers of Animals, Ancient and Modern, celebrate the *Pheasant*, for the goodness of its flesh, assigning to it the first place among birds at Table. Physicians make it the standard wherewith they compare, and accordingly judge of the temperament and goodness of other meats, faith *Longolius*, as he is cited by *Aldrov.* *Aldrovandus* by many arguments proves, that *Pheasants* are better meat than Pullen ; which who desires to know, may consult him in the Thirteenth Book, and Fifth Chapter of his *Ornithology* : At last he thus concludes, *Pheasants* therefore, as well because they are rare, as because they are of a most delicate taste, and yield so excellent a nourishment, as we have proved, seem to be born only for great mens Tables, and have been always had in highest esteem of all Birds.

Pheasants, *Partridges*, *Quails*, and some other Birds, are taken in great numbers with a Net they call commonly * *Expegetarium*, by the help of a Setting-dog, trained up for this sport, who finds out the birds, and when he sees them, either stands still or lies down on his belly, not going very near them, lest he should spring them ; but looking back on the Fowler his Master, wags his Tail, by which the Fowler knows that the Birds are near the Dog ; and so he and his Companion run with the Net, and cover both Birds and Dog.

That all Birds, but particularly *Pheasants*, *Partridge*, and *Quails*, are far more savoury and delicate, when killed by a *Hawk* than if they be caught in snares, or by any other fraud, many have written, and most think. And indeed, there is no doubt but by this means their flesh becomes more short and tender : For that violent motion of the blood occasioned by their flight, and its fervent heat consequent thereupon, macerates the flesh, and disposes it to corruption, but that it thence becomes more savoury and delicate, all men now-adays are not agreed. But the old rule forbids me to dispute about tastes. *Boterus* reports, that Ireland wants *Pheasants* and *Partridges*.

§. II.

The Brazilian Jacupema of Maregrave.

IT is a sort of *Pheasant*, something less than a *Pullet*. Its Head is not great, like a Hen, as is also the Bill. The Eyes are black ; the Neck about seven inches long : The length of the body from the bottom of the Neck to the rife of the Tail about nine inches : Of the Tail (which is broad) a whole foot. The Legs are long [which he divides into upper and lower,] the upper five inches long, the lower three, or a little more. In each Foot four Toes like those of Hens, of which the middle of the three foremost is two inches long. The whole bird is clothed with black feathers, with which something of brown is mixed. The feathers of its Head it can erect in form of a Crest, and those black feathers [I suppose he means those on the Head which make the Tuft or Crest] are encompassed with other white ones. The Throat under the Head, and for an inch and half down the Neck is bare of feathers, and covered with a red skin. The whole Neck below is variegated with white feathers dispersed among the black ones ; as also all the lower Belly, and the hindmost half of the Wings. The upper Legs and the Tail are wholly black, without the admixture of any brown. The lower Legs and Feet are of an elegant red colour. They are made tame ; and their flesh is good. This bird took its name from its voice, for it cries, *Jacu, Jacu, Jacu*. This might as well have been ranked among the Domestic birds.

§. III.

The common Partridge. Perdix cinerea.

THe Cock weighed fourteen ounces and a quarter; the Hen thirteen and an half. The length [of the Cock] from the Bill to the Claws was fourteen inches and a quarter, to the end of the Tail twelve and three quarters. The Bill from the tip to the corners of the aperture or slit of the mouth three quarters of an Inch, to the Eyes an inch. The breadth was twenty inches.

The Bill in young *Partridges* is of a dusky colour, but in old ones it grows white. The *Irides* of the Eyes are a little yellowish. Under the Eyes are certain red excrescences. The Chin and sides of the Head are of a deep yellow or Saffron-colour. The Cock hath on his Breast a red mark of a femicircular figure, resembling a Horse-shoe. The Hen hath not so much red on her Breast. Below the Chin, as far as the Horse-shoe mark, it is of a blue cinereous, adorned with transverse black lines: Beneath the mark the colour fades into dirty or yellowish cinereous. The longer feathers on the sides of the Breast and Belly have each of them a great transverse red spot, their shafts being white. The upper side of the body is particoloured of red, cinereous and black. This Naturalists call a testaceous or potthead colour.

The Prime feathers in each Wing are about twenty three in number, of which the foremost are dusky, with transverse yellowish white spots. The longest feather is five inches and a quarter. The interior covert-feathers of the Wings, and the long feathers springing from the shoulders have their shafts of a yellowish white.

The Tail is composed of no less than eighteen feathers, and is in length three inches and an half: The four middle feathers are of the same colour with the rest of the body; the other seven on each side of a sordid yellow, with cinereous tips.

The Legs below the Knees are bare; they have no footstep or appearance of any Spur. Both Legs and Feet are in young ones of a greenish colour, but in old ones they grow white. The Toes are joyned together with a membrane as in *Heathcocks*.

It hath a great Craw, a muculous Stomach or Gizzard, and a gall-bladder. For the taste and whollomness of its flesh it is deservedly preferred before all other birds. It feeds upon Ants and Ants Eggs, upon the grains of Corn, and also upon the green leaves. But in Winter-time, when it feeds upon green Corn, its flesh is less commendable, than in Summer and Autumn when it feeds upon the Kernel or grain.

The *Common Partridge* is a multiparous bird, laying sixteen or eighteen Eggs ere it fits. With us in *England* it is most frequent. The *Italians* call it *Sturna*, as much to say as *externa*, or outlandish; and in some places also *Pernice*. It is more rare with them, and sells dearer than the *red-leg'd Partridge*.

The *Partridge* (understand it of all the several sorts) by reason of the heaviness of its body, and shortness of its Wings, can neither fly high, nor long continue its flight, howbeit for those short flights it makes it flies very swift and strongly.

In Winter-time they fly in company: For they are of that nature, that they breed and bring up fifteen or sixteen young together, which company all Winter with the old ones. But in the Spring time, when they pair together, they fly by two and two; for then the old ones beat away the Young from them. This out of *Bellonius*: Which is true, not only of birds of this kind, but also of *Pheasants*, *Heathcocks*, &c.

Bellonius saith, that the singing of *Partridges* is a certain sign of day approaching. We have often heard them crying and calling one another after Sun-set.

Partridges (saith *Aristotle*) when any one comes near their Nest, cast themselves down before his feet that looks for it, running and flying as if they were lame, by that means drawing him away from their Nests, and enticing him to follow them; which when they have done, themselves fly away, and afterwards call together their Brood, which so soon as they hear the voice of their Dams presently run to them.

§. IV.

§. IV.

The Brazilian Partridge called Jambu by Pijo.

OF these in the Woods by the Sea-shore are found two kinds, greater and lesser. These are lesser than our *European Partridge*, those both for figure and bulk of body and goodness of flesh are equal and like to ours. The feathers of both all over the body are of a dark fulvous colour, but mingled and spotted with dusky.

§. V.

The Damascus Partridge of Aldrov.

IN the shortness, thickness, and roundness, and whole shape of its body it approaches to our *Partridges*. The colour is so like to the lesser *Partridge*, that at first you can hardly distinguish them: But the Feet in this are in a manner yellow: The Bill is also longer, though else the Bird be much less.

§. VI.

The Red-leg'd Partridge, Perdix ruffa Aldrov. called in Italy Coturnice & Coturno.

THe Cock weighed more than thirteen ounces: His length from the tip of the Bill to the end of the Claws was eighteen inches: His breadth between the tips of the Wings extended twenty two. The *Irides* of the Eyes were red: The Bill almost an inch long, and red: The Legs and Feet also red: The Claws dusky: The Toes as far as to the first joyned connected by a membrane intervening. It had small Spurs [others had none, perhaps these were young ones.] The soles of the Feet were of a dirty yellow.

The Head, Neck, Back, and Rump were ash-coloured, as also the outer part of the Thighs. The lower part of the Neck tintured with a vinaceous colour. The Checks under the Eyes, and the Chin to the middle of the Throat white: Yet in the very angle of the nether Chap was a small black spot. A black border beginning from the Nostrils, and produced above the Eyes encompasses this white space. The Craw below the black line is cinereous: The Breast of a dilute red, inclining to yellow. The feathers on the sides are painted with very beautiful colours. For the tips of some of them are black; and next the black they have a transverse line, the shorter and nearer to the Head of a whitish colour, the longer and more remote of a yellow: Below this a black line again. Of others the tips are red, the colours we have mentioned in order succeeding. The bottoms of all are cinereous.

The beam-feathers in each Wing are in number twenty five, the exterior whereof are dusky, the interior of a dark cinereous: But yet the outer edges of the third, and succeeding to the fifteenth, are of a white, tintured with red. The Tail is four inches long, the two middle feathers being cinereous, the exterior five on each side having their upper half red, their lower cinereous.

It hath a large Craw, a muculous Stomach, or Gizzard, in which dissected we found Caterpillars and Snails.

The Back of the Hen is not all out of cinereous, but rather inclines to red, the middle parts of the feathers being black. The line running above the Eyes is somewhat red. The Checks are of the same colour with the Back: Else it doth not much differ from the Cock. This kind is a stranger to *England*: Howbeit they say it is found in the Isles of *Jersey* and *Guernsey*, which are subject to our King. It is of a more gentle nature than our common *Partridge*, and easily made and kept tame: Whereas the common *Partridge* can hardly be induced to put off his wild nature, and to go out and return home again like tame fowl: Yet I have been told by persons of good credit, that a certain *Sussex* man had by his industry and application made a Covey of *Partridges* so tame, that he drave them before him upon a wager out of that Country to *London*, though they were absolutely free, and had their Wings grown, so that they might if they would have made use of them to fly away.

That this Bird feeds upon Snails *Aristotle* hath delivered, and our experience confirms:

firms: Yet not on Snails only, but also on Caterpillars, Seeds of Wheat and other Grain.

Partridges, to speak of them in general, are very falacious birds, infamous for masculine Venery, and other abominable and unnatural conjunctions. The Ancients have left many fabulous things concerning them, viz. That the Cocks, if they can find them, break the Eggs, lest the Hens being detained by sitting upon them should not be ready or willing to yield themselves to be trodden; for which cause the Hens lay privately, concealing their Nests, as much as they can, from the Cocks. That the Cocks when they want the Hens, to wit, when they have withdrawn themselves to sit, do not only manifest their petulancy and falacity, by their voices and fighting, but also defile one another promiscuously by that nefarious coition, interdicted mankind by no less than a capital punishment. Which things *Pliny* after his manner hath wittily and elegantly comprised in a few words. *Ille [i. e. femina] quidem & maritos suos fallunt, quoniam intemperantia libidinis frangunt carum ova, ne incubando delinquantur. Tunc inter se dimicant mares desiderio seminarum. Viduum autem venerem pati.* That they make two Nests, wherein they lay their Eggs, half in one, and half in the other; in one whereof the Female sits, and in the other the Male: and that both do hatch and bring up their part of Young. That the Hens without being ever trodden by the Cocks, if they do only stand opposite to them, and the wind blow from thence upon them, will conceive Eggs, and those prolific: Of which thing some Modern Writers have indiscreetly endeavour'd to give an account, before they had any assurance of the truth of the matter of fact. That the Hens are so intemperately lustful, that contrary to the manner of other birds, they cannot abstain from the use of Venery so much as while they are sitting: Which particulars also *Pliny* briefly and ingeniously thus words: *Neque in ullo animali par opus libidinis. Si contra mares stercent feminae, aut ab his stantem pregnantibus sunt. Hiantes a. exerta lingua per id tempus astuant, concipiuntque supervolantium afflatu, sepe voce tantum audita masculi: Adeoque vincit libido etiam fectis charitatem, ut illa sursum & in occulto incubans, cum sensu feminam aucupis accedentem ad marem, revocet, & ultro se prebeat libidini.* That the Cock being overcome in fight dares never so much as come in sight of his Mistress or Mate. That the Partridge when her own Eggs are broken, or any ways marred, or lost, steals another Partridge's Eggs, sits upon them, hatches them, broods and brings up the Young, which yet when they are a little grown, hearing their Dams voice, [that is, the voice of that Partridge that laid the Eggs,] do by instinct presently know it, and leaving their Foster Mothers, betake themselves to their own Dams. That the often turns her upon her back, and so, lying with her belly upward, covers her self with clods and straws, and by that means deceives and escapes the Fowlers. But it is not worth the while to insist long upon rehearsing or refusing these particulars.

These Birds (saith *Aldrovandus*) in the Feasts and Entertainments of Princes hold the principal place, without which such Feasts are esteemed ignoble, vulgar, and of no account. Indeed, the Frenchmen do so highly value, and are so fond of Partridge, that if they be wanting they utterly sleight and despise the best spread Tables, and most plentiful and delicate Treatments; as if there could be no Feast without this dish. As the flesh of Partridge (saith *Bellonius*) is very delicate and grateful to the Palate, so in like manner is it greatly commended, for that it nourishes much, is easily digested, and breeds good blood in the body. The flesh of the greater kind is more solid and hard, (though hard only comparatively) of the lesser more tender, and consequently yields a finer, more dissilable and spirituous nourishment, is also of easier concoction, but yet is not so white as that of the greater. Palate-men, and such as have skill in eating, do chiefly commend the Partridge's Wing, preferring it much before the Leg, as indeed it is much better. Hence that English Proverbial Rhythm:

*If the Partridge had the Woodcocks thigh,
T'would be the best bird that e're did fly.*

He that desires yet further information concerning the quality and temperament of Partridge's flesh, let him consult *Aldrovandus*.

§. VII.

Bellonius his Greek Partridge, or great red Partridge, the same with the precedent.

THE great Partridge which the *Grecians*, following the *Italians*, commonly call *Coturno*, seems to us to be different from the Partridges both of *France* and * *Gothland*: For it is twice as big as our Country Partridge, hath red Bill and Legs, * *Gothia* is spotted on the Breast and sides in like manner as ours, of the bigness of a * hand, * or indifferently from Hen. This kind of Partridge is so frequent in the Rocks of *Colme*, the *Cyclades*, ^{rent, means sized.} Islands, and the Sea-coast of *Candy*, that there is not such plenty of any other bird. Their cry is different from that of our Partridge, being great and sonorous, especially in breeding and coupling time, when they express and often repeat the sound of this word [*Cacabis*] whence it should seem that the *Latines* were taught by the *Greeks* to express the note of a Partridge by the word *Cacabare*. We also borrowed the name *Cacabis*, whereby we in some places call a Partridge from their voice or cry. They follow one another on the Rocks. Of this kind, in my judgment, *Aristotle* is to be understood when he saith, *If Hens couple with Partridges they generate a different kind.* They build in an open place without cover or shelter in May-time, among certain herbs, what time they come down from the Rocks, seeking convenient places to build and bring up their Young. They lay their Eggs upon the ground, under some great stone, sometimes eighteen, sometimes sixteen, more or less, like Hens Eggs, but less, white, and speckled thick with small red spots, very good to eat as Hens Eggs, but their Yolks congeal not. After they have hatcht their Young, they lead them out into the Champain or open fields to seek their food. Wherefore we think this kind of Partridge to be altogether different from ours: for in some places of *Italy* both kinds are found, and called by divers names, viz. This by the name of *Coturno* the other by the name of *Perdice* or *Pernice*. Thus far *Bellonius*.

Aldrovandus thinks that this bird differs from the greater red Partridge or *Coturnice* of the *Italians* only in bigness: and truly I am now wholly come over to his opinion; sith *Bellonius* himself makes them all one. What Partridges *Bellonius* means by the Partridges of *Gothia* I know not.

§. VIII.

The Quail, Coturnix.

IT is the least bird in this kind; of a flatter or broader body, and not so narrow or compressed sideways as the *Land-Rail* or *Daker-Hen*. Its length from the tip of the Bill to the end of the Tail is seven inches and an half: Its breadth between the extremities of the Wings spread fourteen inches.

Its Bill from the tip to the corners of the mouth half an inch long; its figure more depressed and plain than in the rest of this kind: The lower Chap black, the upper of a pale dusky. The *Irides* of the Eyes are of a hazel colour: The Eyes have a nistating membrane.

The Breast and Belly are of a dirty pale yellow: The Throat hath a little mixture of red [*ruffi*]. Under the lower Chap of the Bill is a long and broad stroke of black tending downward. Above the Eyes, and along the middle of the Head are whitish lines. The head is black, only the edges of the feathers reddish or cinereous. The middle part of each covert-feather of the Back and lower part of the Neck is marked with a yellowish white stroke, the rest of the feather being particoloured of black and reddish ash-colour. Under the Wings is a bed of white terminated on each side with a border of red mingled with black.

The beam or quill-feathers of the Wings are dusky, crossed with pale red lines: This lesser row of hard feathers in the Wings are almost wholly of one and the same reddish colour. The Tail is short, not above an inch and half long, consisting of twelve feathers, of a blackish colour interrupted with pale-red transverse lines.

The Feet are pale-coloured, covered with a skin divided rather into scales than entire rings: The soles of the Feet yellow. The outer Toes, as far as the first joint, are connected with the middlemost by an intervening membrane.

It hath a Gall-bladder. The Cock had great Testicles for the bigness of its body, whence we may infer that it is a falacious bird. It hath a muculous Stomach or Gizzard;

Gizzard; and just above the Stomach the Gullet is dilated into the bag, which we call the Ante-stomach, the interior *Superficies* whereof is granulated with papillary Glanules.

For catching of *Quails* they use this Art: The Fowler betimes in the Morning having spread his Net hides himself under it among the Corn: then calls with his Quail-pipe. The Cock *Quail*, thinking it to be the note of the Hen that he hears, comes in a trice with all speed to the place whence the noise comes. When the Bird is got under the Net, up rises the Fowler and shews himself to him, he presently attempting to fly away, is entangled in the Net and taken.

The *Quail* is a bird no less salacious than the *Partridge*, infamous also for obscene and unnatural lust. The Cocks are of high spirit and courage; and therefore by some are wont to be trained up and prepared for the combat, after the manner of *Cocks*: And *Ælian* tells us, that of old time at *Athens* Quail-fightings were wont to be exhibited as shews; and so grateful and delightful they were to the people, that there was as great flocking to them as to a spectacle of Gladiators. In some Cities of *Italy*, especially *Naples*, they do also now adays keep fighting *Quails*, as *Aldrovandus* reports. The manner how they induce and provoke them to fight see in him.

Quails are birds of passage: for being impatient of cold, when Winter comes they depart out of Northern and cold Countries into hotter and more Southerly; flying even over Seas, which one would admire, considering the weight of their bodies and shortness of their Wings. When we sailed from *Rhodes* to *Alexandria* of *Egypt* (saith *Belonius*) many *Quails* flying from the North toward the South were taken in our Ship, whence I am verily persuaded that they shift places: For formerly also when I sailed out of the Isle of *Zant* to *Morea* or *Negropont*, in the Spring time I had observed *Quails* flying the contrary way from South to North, that they might abide there all Summer: At which time also there were a great many taken in our Ship.

Among the Ancient *Greeks* and *Latins* *Quails* were condemned and banished Tables as an unwholsom dish; for being reported to feed upon *Hellebore*, and to be obnoxious to the falling sickness, they were thought to produce the like disease in those that eat their flesh: But undeservedly, for now adays they are eaten without any danger, and esteemed a choice dish: And being somewhat rare with us in *England* are sold very dear: Indeed their flesh both for delicacy of taste, and wholsomeness of nourishment is nothing inferior to that of *Partridge* or *Pheasant*. Poulterers, and such as feed them in Coops do not permit them a high place to be in, because leaping up they hurt their heads against the top: nay, though their Coops be so low that they can hardly stand upright in them, yet by striking their heads against the top, they will rub off all the feathers; as we have observed.

§. IX.

The Rail or *Daker-ben*, *Ortyometra* Aldrov. lib. 13. cap. 33. *Crex* Aristotelis.

THE weight of that we described was five inches and an half: Its length from the point of the Bill to the end of the Claws was fifteen inches, to the end of the Tail eleven and an half; its breadth between the extremities of the Wings stretched out nineteen inches: Its Bill $1\frac{1}{2}$ inch long, measuring from the point to the end of the slit. The body of this bird is narrow or compressed side-ways, and like to that of *Water-hens*. The lower part of the Breast and the Belly are white; the Chin also is white, else the Throat is of a more sordid or dirty colour. On the Head are two broad black lines: Also a white line from the shoulders as in the *Morehen*. The middle parts of the covert feathers of the Back are black, the outides of a reddish ash-colour. The Thighs are variegated with transverse white lines. In each Wing are twenty three quail-feathers. The lesser rows of Wing-feathers both above and below are of a deep yellow, as also the borders of the prime feathers. The Tail is almost two inches long, made up of twelve feathers. The Bill is like the *Water-hens*, the upper Mandible being whitish, the nether dusky. The Legs bare above the Knees: the Feet whitish. In the Stomach dissected we found Snails.

It is called *Rallus* or *Grallus* perchance from its stalking [*à gradu grallatorio*] or perchance from *Royale*, because it is a Royal or Princely dish.

Aldrovandus describes his *Rail* thus, Its Bill is less than a *Water-fowl's*, but much bigger than a *Quail's*: Its Tail also is very little, and next to none: Its Legs and Feet in proportion to its body long, of a middle colour between Saffron and green. The colour

colour of almost the whole Head, the Neck, Back, and also the greater part of the Wings respecting the Back of a * testaceous colour, in brief very like to that of a * *testa* figu-
Hen-Quail, wherefore it is by the *Italians* rightly called the King of Quails [*Il re delle Quailie*] which is as much to say as a great *Quail*. The Wings where they are contiguous to the Belly are red. The fore-part of the Neck and the beginning of the Breast are wholly testaceous: The Belly and Hips like the *Goshawks* [*Accipitris fel-larii*.] The Female is all over of a paler colour.

Belonius describes this Bird by the title of the other *Rail* that lives in Broom fields. [*Ortyometra alterius in genistis degentis*.]

It is said to be the *Quails* Leader or Guide when they go from one place to another. In the whole shape of its body it resembles the *Water-fowl*, especially the *Morehen*. Its Legs are long, its Body slender, its Belly white, its Tail short, its Bill pretty long; all which are marks of *Water-fowl*: Wherefore, in my judgment, it more properly belongs to that Tribe, and ought thither to be referred.

This, if I much mistake not, is the Bird which Dr. *Turner* takes to be the *Crex* of *Aristotle*. There is (saith he) a certain Bird in *England* with long Legs, else like to a *Quail*, save that it is bigger, which among Corn and Flax in the Spring and beginning of the Summer hath no other cry than *Crex, Crex*; but this it often iterates: Which I think to be the *Crex* of *Aristotle*: The *English* call it a *Daker-ben*, the *Germans* *Ein Schryck*. I never saw or heard it any where in *England* save in *Northumberland*. But seeing (as *Gesner* rightly) it is manifest by the testimony of the most ancient Writer *Herodotus*, that the *Crex* is as big as the black *Ibis*, the *English Daker-ben* cannot be the *Crex*. Although this Bird be more rare in *England*, yet is it found every where in *Ireland* in great plenty.

§. X.

The Indian *Quail* of *Bontius*.

THIS Bird feeds by Coveys, like *Partridges*, in the Woods of *Java*, although it be also made and kept tame, and its Female, accompanied with her Brood, walks up and down the Yards of houses like the common *Hen*; the Cocks also are no less stout, and given to fighting among themselves till they kill one another, than the *Dunghil-Cocks*. In the colour of their feathers they very nearly resemble the true *Quail*: But their Bill is a little longer: They also make such an interrupted noise or cry by intervals as *Quails* are wont to do; but of a far different sound from that of *Quails*, more like to that horrid drumming noise which *Bittors* make among Reeds in fenny places, which in *Low Dutch* we call *Pittoor*. The longer these Birds continue or draw out that cry, the more generous are they thought to be. They are of so cold a nature, that when shut up in Cages or Coops, if you do not expose them to the Sun-beams, and strow Sand under them, they presently languish, and run a hazard of dying: And therefore by night after Sunset, they shrink up on a heap, as the *Cuckow* doth with us in hollow trees in Winter-time, and in the trunks of trees cover themselves with their feathers. But when the Sun rises they presently sing, and that sound is heard many paces off, that you would wonder so little a bird (for they do not exceed a common *Pigeon* or *Turtle* in bigness) should have so deep and loud a cry. I have sometimes kept of them in Cages, which would give me notice of the approach of Morning or break of day, if I had any serious business to do. For if any business be to be done, it is most commodiously dispatched either in the Morning or Evening. For the day time, while the Sun roasts all things with his scorching heat, is unfit for action, and very unhealthful to stir much in.

CHAP. XII.

Wild Birds of the Poultry-kind that feed on Leaves and Berries, &c. having
Scarlet Eye-brows.

§. I.

The Cock of the Mountain or Wood, *Urogallus* five Tetrao major, Aldrov. called by the
Germans Orhun, by the Venetians Gallo di montagna.

For bigness and figure it comes near to a Turkey. The Cock we measured from the point of the Bill to the end of the Tail was thirty two inches long: The Hen but twenty six. The ends of the Wings extended were in the Cock forty six inches distant, in the Hen no more than forty one.

It had such a Bill as the rest of this kind, an inch and half long, measuring from the tip to the angles of the mouth; its sides sharp and strong. Its Tongue is sharp, and not cloven. In the Palate is a Cavity impressed equal to the Tongue. The Irides of the Eyes are of a hazel colour. Above the Eyes is a naked skin of a scarlet colour, in the place and of the figure of the Eyebrows, as in the rest of this kind. The Legs on the forepart are feathered down to the foot, or rise of the Toes, but bare behind. The Toes are joined together by a membrane as far as the first joyn, then they have on each side a border of skin all along, standing out a little way, and serrate.

The Breast is of a pale red, with transverse black lines, the tips of the feathers being whitish. The bottom of the Throat is of a deeper red: The Belly cinereous. The upper side of the body is particoloured of black, red, and cinereous, the tips of the feathers being powdered with specks, excepting in the Head, where the black colour hath a purple gloss if beheld in some positions. The Chin in the Cock is black, in the Hen red. The Tail is of a deeper red than the other feathers, and crossed with black bars; the tips of the feathers being white. The Tail of the Cock is black, the tips of the feathers being white, and their borders as it were powdered with reddish-ash-coloured specks. The middle feathers especially, and those next to them are marked with white spots. The feathers covering the bottom of the Tail have white tips, else are variegated with alternate black and reddish-ash-coloured transverse lines. After the same manner the whole Back is also painted with black and white cross lines, but finer, and slenderer. The feathers under the Tail are black, but their tips and exterior edges white. The Head [in the Hen] is of the same colour with the back. The tips of the Breast-feathers are black.

Each Wing hath twenty six quill-feathers, the greater whereof are of a more dusky and dark colour: The rest have their exterior Vanes variegated with red and black. The tips of all beside the ten outmost are white. The longer feathers springing from the shoulders are adorned with angular beds of black, wherewith a little red is mingled below. The lesser rows of hard feathers of the Wings are variegated with dusky, red and white, their tips being white. In the Cock the shoulders and lesser rows of hard feathers above are variegated with red and black lines, underneath are white, except those under the first *internodium*, which are black. The longer feathers under the shoulders are white, which when the Wings are closed make a large white spot. The Wings under the second *internodium* are black, with transverse lines of white. In the Cock the Neck is of a shining blue. The Thighs, Sides, Neck, Rump, and Belly are in like manner variegated with white and black lines. The Head is blacker: About the vent it is of an ash-colour.

It hath very long blind Guts, straked with six white lines. The Stomach muscular, as in the rest of this kind, full of little stones. The Crow was stuffed with the Leaves, Tops, and Buds of the Fir-tree. The skin of the stomach sticking to the muscles is soft and hairy like Velvet.

But for the knowledge of this Bird, and distinguishing it from all others, there is no need of so prolix and particular a description of colours, which vary much by age, and perchance also place, and other accidents, when as the bigness alone is sufficient for that purpose.

This

This Bird is found on high Mountains beyond Seas, and as we are told in Ireland, (where they call it, *Cock of the Wood*) but no where in England. At Venice and Padua we saw many to be sold in the Poulterers Shops, brought thither from the neighbouring Alps.

I take the *Grygallus major* of Gesner and Aldrovandus (who also calls it the *Tetrax of Nemesianus*) to be the Female of this Bird. For the Females in this kind of Birds in variety and beauty of colours excel the Males. Whereas Gesner taking it for granted, that the Females do in no kind of creature excell the Males in variety of colours, being deceived by this presumption, took and described for different Species the different Sexes in both these kinds, viz. the *Cock of the Mountain*, and the *black game*: And so of two Species made four; to wit, 1. *Urogallus major*. 2. *Grygallus major*. 3. *Urogallus minor*. 4. *Grygallus minor*. The second and fourth being the Females of the first and third. Moreover, being himself mistaken, he thought Turner to be so: Who makes the Male *Morehen*, that is the lesser *Tetrao*, or lesser *Urogallus* of Gesner, to be black; the Female all variously spotted, so that if it were not bigger and redder than a *Partridge*, it could hardly be distinguished from it. Aldrovandus follows Gesner, making the *Grygallus major* of Gesner (that is, the Female of the *Urogallus major*) the *Tetrax of Nemesianus*; without cause reprehending Longolius, who indeed was of the same opinion; whereas he himself erroneously makes the Male and Female of the Cock of the Mountain [*Urogallus major*] diverse or distinct kinds. So then the case stands thus:

1. { Cock of the Mountain the Male ——— 1. The greater *Urogallus*, Gesn. Aldrov.
Cock of the Mountain the Female ——— 2. The greater *Grygallus*, Eorund.
2. { Black game or Grouse the Male ——— 3. The lesser *Urogallus*, Eorund.
Black game the Female ——— 4. The lesser *Grygallus*, Eorund.

The flesh of this bird is of a delicate taste and wholesome nourishment, so that being so rarely a bird, and withal so rare, it seems to be born only for Princes and great mens Tables.

§. II.

The Heathcock or Black game or Grouse, called by Turner the *Morehen*. Tetrao, seu *Urogallus minor*.

The Cock weighed forty eight ounces: was in length from the point of the Bill to the end of the Tail twenty three inches, [The Hen was but nineteen inches long.] Its breadth thirty four inches [the Hens thirty one.]

The Cock is all over black, but the edges of the feathers, especially in the Neck and Back, do shine with a kind of blue gloss. His Legs are grey. The Female is of the colour almost of a *Woodcock* or *Partridge*, red with black transverse lines. The Breast and Belly are hoary. The Wings underneath and the long feathers are white, as in the Cock. The middle of the Back is of a deeper red. The Rump and edges of the feathers on the Throat are hoary. The feathers under the Tail white.

In each Wing are about twenty six beam-feathers: In the Cock the bottom of the fifth of these is white, of the eighth and succeeding to the twenty sixth the whole lower half. Of the eleventh and following feathers to the two and twentieth the tips are also white. The long feathers under the shoulders are purely white. In the Hen the ten outmost feathers are dusky, the rest of the same colour with the body, saving their tips, which are whitish. The bottoms of all but the first six are white. Moreover, those great quill-feathers, which, as we said, are dusky, have something of white in the outer borders. The Wings underneath, and those longer feathers in both Sexes are white, which when the Wings are closed appear outwardly on the Back in the form of a white spot.

The Tail consists of sixteen feathers, and is in the Cock near seven inches long; [Understand this of the exterior feathers, for the interior do not exceed four inches.] In the Cock the three exterior feathers on each side are longer than the rest, and stand bending outward, the fourth on each side shorter, and less reflected. In the Female the outmost feathers are indeed longer than the rest, but not reflected. The Tail is of the same colour with the body, only the tips of the feathers of a hoary white.

The

The Bill is black and crooked; the upper Chap somewhat prominent and gibbous. Under the Tongue is a kind of glandulous substance: In the Palate a Cavity impressed equal to the Tongue. The Tongue is undivided, soft, and somewhat rough. The Eyebrows bare and red. The Ears great both in Male and Female. The Legs rough with feathers growing on their fore-part: The Toes naked, and connected by a membrane as far as the first joint. On each side the Toes are the like borders of skin as in the precedent Fowl, standing out from the Toe, and pectinated. The Claw of the middle Toe is on the inside thinned into an edge. It hath no spurs.

Its Guts are * fifty one inches long: Its blind Guts (which is strange) twenty four, striate with six lines. The Craw large. They feed upon the tops of Heath, Acorns, &c. The Pouts do a long time accompany their Dams even after they be come to their full growth, as do young *Partridges*. They are infested with Lice and Ticks.

This kind is frequent in the sides of high Mountains; sometimes it descends into the plains, not rarely occurring in the lower Heath-grounds. The Male differs so strangely from the Female, that to one unacquainted with them they might well seem to be of different kinds; yea, to *Gesner* himself they seemed so, as we shewed in the foregoing Chapter.

This is *Turners Morehen*, which he thinks to be so named from the colour of the Cock, which is black, as in Moors, though he is mistaken in that he writes, that it hath on its Head a red fleshy Crest, and about the Cheeks two as it were red fleshy Lobes, or Gills, for it hath no other red flesh about the Head but the Eye-brows, which all the rest of this *Genus* have. See *Aldrovand. lib. 14. cap. 15.* *Gesner* calls it *Gallus Scoticus Sylvesteris*, that is, The wild Scotch Cock. I suspect also that the *Gallus Palustris Scoticus* of the same *Gesner* is no other than this Bird. The Histories of these Birds you have in *Aldrovandus Ornithology, lib. 14. cap. 15; 16.*

§. III.

* The Attagen of *Aldrovandus*, called by the *Italians* *Francolino*.

IN bigness and the whole habit and fashion of its body it approaches to a *Pheasant*. It hath a short, black Bill, crooked at the end. The colour is various almost the whole body over. The Head especially hath a very beautiful aspect, a yellowish Crest variegated with black and white spots, being erected in the middle of its Crown. The Pupil of the Eyes is black, the Iris yellow. It hath Eye-brows, like the Heathcock, of naked scarlet-coloured skin. Under the Bill and in the beginning of the Throat hangs down as it were a beard of very fine feathers. Its Neck is of the longest, and in comparison with the bulk and make of its body slender, of an ash-colour, besprinkled with black and white spots; which in this respect differ, that here the white, in the Head the black are the deeper. The spots of the Breast are of the same colour, wherewith are other ferrugineous ones mingled. The Belly, Tail, Hips, and Legs [which are covered with feathers] are of a lead colour, and also besprinkled with black spots. The fore-toes of the Feet are long, the back-toe short, all armed with crooked Claws.

They are by the *Italians* called *Francolini* as it were *Franci*, that is, *Free Fowl*, because the common people are forbidden to take them, and Princes grant them freedom of living.

Olim describes this *Francolino* a little otherwise. In the figure (saith he) and proportion of its body it resembles a common Partridge, but in bigness something exceeds it. The Breast and all the Belly are spotted with black and white. The ends of the Wings and Tail are black. The Head, Neck, and Rump are fulvous, inclining to red, with a little black intermixed. But neither his figure represents, nor description mentions any Crest. The Legs also in *Olim's* figure are naked.

This Bird is either the same with our other *Lagopus*, called the *Red-game*, or very like it; but differs from it, in that it hath a Crest upon its Head. But the *Attagen* of *Belonius* (as may be seen by its Picture) is destitute of a Crest. Indeed I should think it to be the same, did not the place forbid it. For our *red Game* lives upon the tops of the highest Mountains in Northern Countries, whereas the *Attagen* of *Aldrovandus* is found plentifully in the Mountains of *Sicily*, which is a very hot Country. Yet I make no question, but the Bird, which *Belonius* and *Scaliger* understand by this * name, that lives in the *Pyrenean* Mountains, and the Mountains of *Auvergne*, and

which

which, *Belonius* saith, comes not down into plain Countries, is the very same with our *Red Game*: And perchance also the *Attagen* of *Aldrovandus* is no other, with *Francolino* is a name common to both *Aldrovandus* and *Belonius* his Bird: And *Aldrovandus* writes, that his *Attagen* is a Mountain Bird. Neither is it a sufficient argument to prove the contrary, that *Sicily* where it is found is a hot Country: for Mount *Etna* in *Sicily* is so cold, that the top of it for the greatest part of the year is covered with Snow. I am sure when we went up it in the year 1664, in the beginning of June the Snow was not melted. But if the Legs thereof be bare, (for *Aldrovandus* doth not affirm it in his description, though his figure represents them bare) and the Head always crested, it cannot be our *Red Game*.

The flesh of this Bird is most excellent, of easy digestion, and yielding plentiful and very good nourishment: And therefore among the Ancients was preferred before all other, and placed in the highest degree of dignity.

§. IV.

The Hazel-hen, Gallina corylorum, Attagen, Gesn.

THE Bird we described was a Cock, * weighed but a pound, being from Bill point to Tail end fifteen inches long; and twenty two broad.

The Bill, as in Hens, is blackish, from the tip to the angles of the slit of the mouth almost an inch long: The upper Chap a little prominent and crooked. In the Palate is a Cavity equal to the Tongue. Above the Eyes a naked red skin takes up the place of Eye-brows, as in the *Heathcock*, and others of this kind. The Eye-brows of the Female are not so red, but paler. The Legs before are feathered half way down, behind bare as high as the knees. The fore-toes are joyned together by a membrane from the divarication to the first joint: And have besides such like serrate borders, or welts, standing out on each side, as were observed in the precedent Birds. The inside of the Claw of the middle Toe is thinned into an edge.

The whole Belly is white. The Breast white, spotted with black spots in the middle of the feathers: The several feathers having some one spot, some two or three cross lines: The lower part of the Throat red, but the Chin of a deep black, encompassed with a white line. The Hen wants this black spot under the Chin. From the Eyes to the hind-part of the Head a white line is produced. The Head is of a reddish ash-colour: The Back and Rump are yet more cinerous, of a colour like that of a *Partridge*. The lower part of the Throat or Gullet is variegated with transverse black lines. The sides under the Wings are red or fulvous, the tips of the feathers being white. The long feathers springing from the shoulders, that cover the Back, are all white.

The Wings are concave as in *Partridges* and the rest of the Poultry kind: The beam-feathers in each Wing are twenty four in number, the foremost or outmost whercof on the outside the shaft were parti-coloured of dusky and white, on the inside dusky. The greater rows of covert Wing-feathers were variegated with red, white, and black.

The Tail was made up of sixteen feathers all equal, of about five inches long. The seven exterior on each side had their tips of a dirty white; next the white a bar or bed of black an inch broad; the rest of the feather to the very bottom particoloured of black and white. The two middlemost of the Tail are of the same colour with the body, having cross bars of white powdered with dusky specks. The tips of the long feathers under the Tail are white, the middle part black, the lower red.

The Stomach is muscular: The Guts thirty six inches long: The blind Guts fifteen, which in this Bird also are striate. The flesh boiled or roast, as in the rest of this kind, is white, very tender also and delicate.

Mottlearned men (saith *Aldrovandus*) are of opinion, that this is the Bird which by the Ancient Greeks and Latines was called *Attagen*; from whom yet he differs. It is wont (saith *George Agricola* as he is quoted by *Aldrovandus*) to live in thick and shady woods. The same also writes that it is found plentifully in the Mountainous Woods about the foot of the Alps, especially where hazels and briars abound. We saw them in the Market at *Nuremberg* to be sold: Whence we gather that they are found in the great Woods near that City, though they be not mountainous: What they live chiefly upon we cannot certainly say, but we verily believe that their food is

the

* Understood
it of the bird
we described.

* This Bird was excruciated, for it was bigger than a Partridge, and equal to a handium Pullet, and would elc have weighed more.

the fame with the other Birds of this kind, viz. *Bill-berries*, *Crow-berries*, *Black-berries*, &c. and in the Winter-time the tops of *Heath*, *Fir*, and other ever-green shrubs: But whether they do eat the Catkins of *Hazel* (as *Albertus* affirms, and from whence they seem to take their name) we know not.

ϕ. V.

The white Game, erroneously called the white Partridge, Lagopus avis, Aldrov.

For figure and bigness it comes near to a tame Pigeon, save that it is something bigger; weighs fourteen ounces: From the tip of the Bill to the end of the Tail or Feet (for they are equally extended) is about sixteen inches long; between the extremities of the Wings spread twenty four inches broad. The Bill short, black, like a Hens, but less: The upper Chap longer and more prominent. The Nostrils are covered with feathers, springing out of a skin on the lower side the holes. Above the Eyes, in the place of the Eyebrows is a naked skin of a scarlet colour, and of the figure of a *Crescent*.

In the Cock-birds a black line drawn from the upper Chap of the Bill reaches further than the Eyes towards the Ears; which in the Hens is wanting: All the rest of the body, excepting the Tail, is as white as Snow.

Each Wing hath twenty four prime feathers, of which the first or outmost is shorter than the second, the second than the third. The shafts of the six outmost are black. The Tail is more than a Palm long, compounded of sixteen feathers, the two middlemost whereof are white; the outmost on each side without the shaft also white, all the rest black. [Those that I (J. R.) described in *Rhetia* had the two middle feathers of their Tails only white, all the rest black.] The feathers next the Tail, incumbent on it, are of equal length with the Tail itself; so that they do wholly cover it. The Legs, Feet, and Toes, to the very Claws, are covered with soft feathers, thick-fet, like Hares feet, whence it took the * name. The Claws are very long, not unlike the nails of some Quadrupeds, as for example *Hares*; of a dark horn or lead colour. Its back-toe or heel is small, but its Claw great and crooked. The fore-toes are joined together by an intervening membrane, as in the other fowl of this kind. The Claw of the middle Toe is something hollow all along the middle, the edges of this furrow or channel being sharp. Under the Toes grow long hairs very thick.

The Claw is great, and in that we dissected full of the tops and leaves of *Fir*, *Heath*, *Bill-berries*, &c. The Stomach or Gizzard muscularous: The Guts forty inches long: The blind Guts long, great, and striate.

In the Alps of *Rhetia*, and in other high Mountains, which are for a great part of the year covered with Snow, it is frequently found. Wherefore Nature, or the Wisdom of the Creator, hath fenced its Feet against the sharpness of the cold with a thick covering of feathers and down.

These Birds, for the excellency of their flesh, are commonly called *White Partridges*, and thought to be so by the Vulgar; whereas indeed the *Partridge* and *Lagopus* are far different Birds. Yet the *Savoyards*, and other *Alpine* people, who are not ignorant of their difference, call them so still; at first perchance by mistake from their agreement in figure and magnitude they began to be so called, and now they continue the old name.

ϕ. VI.

* The other or particoloured *Lagopus* of *Gesner*.

There is another sort of *Lagopus* found on the Mountains of *Switzerland*. The Bird we described of this kind was a Male. Its Belly white, its Wings all milk white: Yet on the hinder part were some feathers partly dusky, partly spotted. The Head, Neck, and Back particoloured, with dusky and spotted feathers. The Neck underneath had a great deal of white, and but a little black; above was covered partly with pied, partly with white feathers. Above each Eye was a semicircular skin of a red colour. Its Bill was very short, and black, the upper Chap whereof was crooked, and received [within its edges] the nether, which was channelled. The Tail was five inches long, consisting of twelve black feathers, and two white

white ones in the middle, and three or four particoloured ones. The Legs and Feet, down to the very Claws, were covered with white feathers growing very thick and close together, so that nothing at all appeared bare but the black Claws. Only the foal of the Foot and inner part of the Toes were without feathers: Yet might the Toes be wholly covered with the hair-like feathers meeting underneath. It was as big as a Pigeon, or something bigger: The length of the whole about five Palms; I suppose this Bird is called in *Italian* about *Trent Otono*; about the Lake called by the Ancients *Verbanus*, now *Maggiore*, [or the greater,] *Colmagre*: Our Countrymen [the *Switzers*] *Stein-hun* [or Stone-hen;] as some do also the precedent. Others for distinction sake add the bigness. I guess this second kind to be a little the bigger. As for the former kind I doubt not but it is the first *Lagopus* of *Pliny*, white, &c. But this second, although perchance it may be doubted, whether it be the second *Lagopus* of *Pliny*, which, as he writes, differs from *Quails* only in bigness, yet ought by all means to be referred to the same *Genus* with the first. Thus far *Gesner*. I am of opinion that this Bird is not only generically, but even specifically, the same with the former or first *Lagopus* of *Pliny*: For, except some marks and spots on the upper side of the body, it agrees perfectly therewith: But those are not sufficient to infer a difference of kind: Seeing that the first *Species* also is laid to change colour in Summer, and become dusky: Yea, those which ascend not up the Mountains are reported not to be white, no not in Winter. But I dare not pronounce any thing rashly; referring the matter to the determination of the learned and curious, that live in those Countries, or have opportunity of travelling and sojourning there.

ϕ. VII.

The Red Game, called in some places the Garrowcock and More-cock, Lagopus altera Plinii.

It is near half as big again as a *Partridge*, for the figure of its body not unlike: Somewhat [yea, considerably] bigger than the *Lagopus*: Its Feet and Claws exactly like his. Its Bill is short and blackish: Its Nostrils elegantly covered with feathers, as in the *Lagopus*. But especially remarkable are the scarlet-coloured naked skins above each Eye, of the figure of a *Crescent*, in place of Eye-brows, which in the Cock are much broader, and have in their upper Circumference a border of loose flesh snipt, as it were a fringe or Crest. In the Cock the Plumage about the *basis* of the Bill is powdered with white specks; and at the *basis* of the lower Chap, on each side is a pretty great white spot; but not so in the Female. Moreover, the Male differs from the Female, in that it is much redder than she: So that in the Throat and upper part of the Breast it hath no mixture at all of any other colour. All the upper side of the Body, Head, Neck, Back, and covert-feathers of the Wings are particoloured of red and black, each single feather being painted with red and black transverse wayed lines. Howbeit in the Cock the red exceeds the black; yet hath he in the middle of the Back and on the Shoulders great black spots, which the Female hath not.

In each Wing are twenty four quill-feathers, all dusky, except the exterior edges of those next the body, which are red. The outmost feather of the Wing is shorter than the second, the third the longest of all. The interior bastard Wing is made up of white feathers. The feathers also on the under side of the Wings next to the flags are white. The Breast and Belly are almost of the same colour with the Back in both Sexes: Yet in the middle of the Breast and Belly are some pretty great white spots. The Legs and Feet are clothed with a long thick Plumage or Down to the utmost ends of the Toes. The Tail is more than a handful long, not forked, consisting of sixteen feathers, all black except the two middlemost, which are variegated with red. The flesh is very tender, especially in the younger ones, not so white as a Hens.

It is frequent in the high Mountains of *Derbyshire*, *Yorkshire*, *Westmorland*, and *Wales*. It lays five, six, seven, or eight Eggs, seldom more, one inch three quarters long, sharper at one end, all speckled with dark red specks or points, only towards the sharper end are one or two beds void of spots. The younger are infested with belly-worms, which sometimes as they fly hang down a foot length from behind. We take this Fowl to be the *Lagopus altera* of *Pliny*, lib. 10. cap. 48.

It delights to abide in the highest tops of the highest Mountains, and with us never comes down into the Plains, yea, seldom into the sides of the Mountains.

This is the Bird which *Bellonius* call the *Attagen*, as we said before in the Chapter of the *Attagen* of *Aldrovandus*, and takes that Bird which the *Savoyards* call, the *white Partridge*, and *Pliny*, *Lagopus*, to be a variety of this; for it is all over white, and hath the Legs covered with feathers (though finer) like the *Attagen*: The *Italians* also call both kinds *Francolino*. And indeed the colour and bigness excepted, the *Red Game* differs little from the *Lagopus*. The figure of the Bill and whole body is the same in both: The Feet alike feathered to the very Claws: So that Mr. *Willughby* also, together with *Bellonius*, did sometimes suspect that they differed rather accidentally than specifically. But to me so great difference of colour and bigness do necessarily infer a diversity of kind. The flesh of these, and the rest of this Tribe, doth suddenly corrupt, and therefore the Fowlers, so soon as ever they take them, presently exenterate them, and stuff the Cavity of the Belly with green *Ling*.

§. VIII.

* *Bellonius* his *Damascus Partridge*, which *Aldrovand* supposes to be the other *Lagopus* of *Pliny*.

There are (saith he) no wild Birds at *Damascus* more notable than the *Partridges* of that Country. They are less than the red or ash-coloured. In the colour of the Back and Neck they resemble a *Woodcock*: But their Wings are of a different colour. For where they are joyned to the body they are covered with white, dusky, and fulvous feathers: Ten of the prime feathers are cinereous. The inner side of the Wings and the Belly are white. It hath a collar-like mark on its Breast, like the * *Merula torquata*, consisting of red, fulvous, and yellow colours: Else in the colour of the lower part of the Head and Neck, in the Bill and Eyes it is like a *Partridge*, and hath a short Tail. We had ranked it with the *Water Rail*, or *Woodcock* or *Plover*, but that its Legs were feathered, like the *Savoyard* white *Partridges* (which is the *Lagopus*) or a rough-footed *Dove*. This, if rightly described, is a kind of *Lagopus* or *Heath Cock*, which we have not yet seen; and the least of that kind that we have yet seen or heard of.

* The Ring
Ouzel.

CHAP. XIII.

Birds of the Poultry-kind that want the back-toe.

§. I.

The Bustard, Otis seu Tarda avis.

It is for bigness nothing inferior to a *Turkey*. Its length measuring from the beginning of the Bill to the end of the Tail was sixty inches. Its breadth, or distance between the tips of the Wings spread two yards and an half. Its Bill like a Hens, the upper Chap being something crooked. The Head and Neck are ash-coloured; the Belly white: The Back variegated with red and black transverse lines. It wants the back-toe, which is especially remarkable: For by this note alone and its bigness, it is sufficiently distinguished from all other Birds of this kind. It feeds upon Corn, Seeds of Herbs, Colewort, Dandelion leaves, &c. In the Stomach of one dissected we found a great quantity of *Hemlock Seed*, with three or four grains of *Barley*, and that in Harvest time. On *New-market* and *Royston Heaths* in *Cambridgeshire* and *Suffolk*, and elsewhere in *Watts* and *Plains* they are found with us.

They are of slow flight, and when they are lighted can hardly raise themselves from the earth, by reason of the bulk and weight of their bodies, from whence without doubt they got the Latine name *Tarda*. They are called by the Scots *Gustarde*, as *Histor Boethius* witnesseth in these words: In March, a Province of Scotland, are Birds bred, called in the *Vulgar Dialect* *Gustardes*, the colour of whose feathers and their flesh is not unlike the *Partridges*, but the bulk of their body exceeds the *Swans*.

Some say, one may catch them with ones hands before they can compose themselves to fly; but this is a mistake, for though (as we said before) it be long ere they can raise themselves from the earth, yet are they very timorous and circumspect, and will

will not suffer a man to come within a Furlong of them, before they take Wing and fly away. Yet our Fowlers report that they may be run down with *Grey-hounds*.

Italy (saith *Aldrovandus*) hath none of these Birds, unless they be brought over accidentally by the force of tempestuous winds. But we when we travelled in *Italy* did see in the Market at *Modena* a *Bustard* to be sold, whence we suspect that there are of them in that Country.

Though some discommend their flesh, yet with us it is esteemed both delicate and wholesome. Hence, but chiefly for its rarity, the *Bustard* sells very dear, serving only to furnish Princes and great mens Tables at Feasts and public entertainments.

§. II.

The French Canne-petiere, Anas campestris or Tetrax of Bellonius.

The *Field-Duck* seems to us to be a Bird peculiar to *France*, where there is not a Countryman but knows it, at least by name. It is so called, not because it is a Water-bird, but because it fits on the ground like the *Water-Duck*. But it hath no similitude or agreement with *Water-fowl*, being a Land-bird. It is of the bigness of a *Pheasant*; the Head, saving the bigness, resembling a *Quail*, the Bill a *Pullet*. It is more known by its name, than by its shape: For we have a Country- proverb against suspicious persons, wherein we say, that they play the *Land Duck*. It is taken in Plains and open fields, as they take *Partridges*, in snares, with Nets and à la forme, and also with Hawks. But it is very crafty in defending and shifting for itself: flying near the ground, and that* with great force and swiftness, for two hundred or three hundred paces, and when it alights or falls on the ground running so swiftly, that scarce any man can overtake it. It hath only three Toes in each foot, like the *Bustard* or *Plover*. The roots of all the feathers are red, and as it were of a sanguine colour; so joyned to the skin as in the *Bustard*, whence also we take it to be a kind of *Bustard*: For both, but especially this, is white under the Belly: But the Back is variegated with three or four colours, to wit, a yellow tending to red, with somewhat of cinereous and red intermixed. Four Wing-feathers in the upper part have black tips. Under the Bill, down as far as the Breast, it is white. A white Collar near the Crop compacts the Breast, as in the *Savoy Merle*, or *Water-Ouzels*. [But this Collar appears not in *Bellonius* his figure.] The colour of the Head and upper part of the Neck is the same with that of the Back and Wings. The Bill is black, less than in the *Jonic Attagen*. The Legs incline to cinereous. He that desires an exact description of this Bird, let him imagine a *Quail* of the bigness of a *Pheasant*, but very much spotted; for just such is this *Field-Duck*. All the interior parts it hath common with other granivorous birds. It is reckoned among delicate Birds, and esteemed as good meat as a *Pheasant*. It feeds indifferently upon all sorts of Grain, as also upon *Ants*, *Beetles*, and *Fliers*, and likewise upon the leaves of green corn. And although the colour of the Neck and Head be not always the same, (and herein consists the difference between the Male and the Female) yet the Back and Wings never change colour. This Bird seems not to have been mentioned by the Ancients.

CHAP. XIV.

Of Doves or Pigeons in general.

The Marks common to all sorts of *Pigeons*, whereby they may be distinguished from all other kinds of Birds, are not very many, viz. a peculiar figure of body, resembling that of a *Cuckow*; short Legs; long Wings; swift flight; a mournful voice; to lay only two Eggs at one sitting, but to breed often in a year. *Aldrovandus* saith, it is proper to all *Pigeons* to wink with both Eye-lids. They do not all agree in the figure of the Bill: For some have slender and indifferently long Bills, others thick and short ones. The Feet of all, at least so many as we have yet seen, are red or sanguine. In the *Pigeon-kind* the Male and Female divide between them the labour of incubation, sitting by turns. The Male also assists the Female in

A a 2

feeding

feeding and rearing the Young. And for an internal note, it is common to them to have no Gall-bladder.

CHAP. XV.

Of the several kinds of Pigeons.

§. I.

The common wild Dove or Pigeon. *Columba vulgaris*.

A Female, which we described, weighed thirteen ounces: Was in length from Bill to Tail thirteen inches; in breadth twenty fix.

Its Bill was slender, sharp-pointed, and indifferently long, like to that of a *Lapping* or *Plover*, above the Nostrils soft, and white by the asperion of a kind of fufuraceous substance, else dusky. The Tongue neither hard, nor cloven, but sharp and soft. The *Irides* of the Eyes of a yellowish red. The Legs on the forepart feathered almost to the Toes: The Feet and Toes red; the Talons black.

The Head was of a pale blue; the Neck as it was diversely objected to the light did exhibit to the Beholder various and shining colours. The Crop was reddish, the rest of the Breast and Belly ash-coloured. The Back beneath, a little above the Rump, was white, (which is a note common to most wild *Pigeons*) about the shoulders cinereous, else black, yet with some mixture of cinereous.

The number of prime feathers in each Wing was about twenty three or twenty four. Of these the outmost were dusky, of the rest as much as was exposed to light black, what was covered with the incumbent feathers cinereous. The covert-feathers of the ten first *Remiges* were of a dark cinereous: Of the rest of the covert-feathers (almost to the body) the tips and interior Webs, as far as the shafts were cinereous, the exterior black. The covert-feathers of the under side of the Wings purely white.

The Tail is made up of twelve feathers, four inches and an half long, the middle being somewhat longer than the extremes. The tips of all were black: The two outmost below the black on the outside the shaft were white; all the rest wholly cinereous, the lower part being the darker. The feathers incumbent on the Tail were cinereous.

It had a great *Craw*, full of *Gromil* seed. The blind Guts were very short, scarce exceeding a quarter of an inch. It hath (as we said of *Pigeons* in general) no Gall-bladder, and lays but two Eggs at a time.

This kind varies much in colour; there are found of them ordinarily milk-white. *Aldrovandus* describes and figures many sorts of tame *Pigeons*, which he thus distinguishes:

Tame or house Doves are either	{	Of our Country, which have their Feet either	{	Naked	The greater called <i>Tronfi</i> , and in English <i>Runts</i> , whose description and figure you have, t. 2. pag. 462.		
					The lesser or most common, t. 2. pag. 463.		
					The greater, t. 2. pag. 466		
					Crested, t. 2. pag. 469.		
					The lesser		
{	{	Rough	{	Smooth-crown'd, t. 2. pag. 467.			
					Frilled Pigeons, t. 2. pag. 470.		
					Cyprus Pigeons	Hooded, with their Feet	Rough, t. 2. pag. 471.
						Bare, of which there are several kinds set forth, p. 472, 473, 474	Smooth-crown'd, called <i>Indian Pigeons</i> , t. 2. pag. 477.
{	{	Outlandish, to wit,	{	<i>Candy Pigeons</i> , having in the Bill, above where it is joyn'd to the Head a white Tubercle or Wattle, p. 478.			
				<i>Persian</i> or <i>Turkey Pigeons</i> of a dark colour, p. 481.			
				<i>Varro's Stone</i> or <i>Rock Pigeon</i> .			

Under

Under the title of Domestic, which I have Englished tame or house Doves, he comprehends the common wild *Pigeon* kept in Dove-cotes, which is of a middle nature between tame and wild.

§. II.

Divers sorts of tame Pigeons.

I. The greater tame *Pigeon*, called in Italian, *Tronfo* & *Astornellato*; in English, a *Runk*; a name (as I suppose) corrupted from the Italian *Tronfo*: Though to say the truth, what this Italian word *Tronfo* signifies, and consequently why this kind of *Pigeon* is so called, I am altogether ignorant. Some call them *Columba Rustica*, *Rustica Pigeons*, whether because they are brought to us out of *Russia*, or from some agreement of the names *Runt* and *Russia*, I know not. These seem to be the *Campania Pigeons* of *Pliny*. They vary much in colour, as most other Domestic Birds: Wherefore it is to no purpose to describe them by their colours. In respect of magnitude they are divided into the biggest and the lesser kind. The greater are more sluggish birds, and of slower flight; the same perchance with those *Gesner* saith he observed at *Venice*, which were almost as big as *Hens*. The lesser are better breeders, more nimble, and of swifter flight. Perchance these may be the same with those, which * *Aldrovandus* tells us are called by his Country men *Colombe sotto banche*, * *Ornithol.* t. 2. pag. 350. that is, *Pigeons* under Forms or Benches, from their place; of various colours, and bigger than the common wild *Pigeons* inhabiting Dove-cotes.

2. *Croppers*, so called because they can, and usually do, by attracting the Air, blow up their Crops to that strange bigness that they exceed the bulk of the whole body beside. A certain * *Hollander* informed *Aldrovandus*, that these *Croppers* *Doves*, as they call them, are twice as big as the common Domestic *Pigeons*, which as they fly, and while they make that murmuring noise, swell their throats to a great bigness, and the bigger, the better and more generous they are esteemed. Those that I saw at Mr. *Copes*, a Citizen of *London*, living in *Jewin Street*, seemed to me nothing bigger, but rather less than *Runts*, and somewhat more slender and long-bodied. These differ no less one from another in colour than the precedent.

3. *Broad-tail'd Shakers*, called *Shakers* because they do almost constantly shake or wag their Heads and Necks up and down: *Broad-tail'd*, from the great number of feathers they have in their Tails; they say, not fewer than twenty six. When they walk up and down they do for the most part hold their Tails erect like a *Hen* or *Turkey-Cock*. These also vary much in colour.

4. *Narrow-tail'd Shakers*. These agree with the precedent in shaking, but differ in the narrowness of their Tails, as the name imports. They are said also to vary in colour. This kind we have not as yet seen, nor have we more to say of it.

5. *Carriers*. These are of equal bigness with common *Pigeons*, or somewhat less, of a dark blue or blackish colour. They are easily distinguished from all others, 1. By their colour. 2. In that their Eyes are compassed about with a broad circle of naked, tuberos, white, fufuraceous skin. 3. That the upper Chap of the Bill is covered above half way from the Head with a double crust of the like naked fungous skin. The Bill is not short, but of a moderate length. They make use of these birds to convey Letters to and fro, chiefly in the *Turkish Empire*. Perchance these may be the *Persian* and *Turkish Pigeons* of *Aldrovand*, all over of a dusky or dark brown colour, excepting the Eyes which are scarlet, the Feet which are of a paler red, and the Bill, which (as he saith) is yellow; wherein they differ from ours, whose Bills are black. The nature of these birds is such, that though carried far away they will return speedily thither, where either themselves were bred or brought up, or where they had hatch and brought up Young. Of this kind we saw in the Kings Aviary in St. *James's Park*, and at Mr. *Copes*, an Embroiderer in *Jewin Street, London*. Moreover, we read that the Ancients sometimes made use of *Pigeons* in sending Letters, as for example, *Hirtius* and *Brutus* in the Siege of *Modena*, *Hirtius* sending a Dove to *Brutus*, and *Brutus* back again to *Hirtius*, having, by meat laid in some high places, instructed these *Pigeons*, before shut up in a dark place, and kept very hungry, to fly from one to another.

6. *Jacobines*, called by the *Low Dutch Cappers*, because in the hinder part of the Head or Nape of the Neck certain feathers reflected upward encompass the Head behind, almost after the fashion of a Monks Hood, when he puts it back to uncover his Head.

the Neck was adorned with a spot of beautiful feathers, of a black colour, with white tips. The exterior quill-feathers of the Wings were dusky, the middle cinereous; the interior had their edges red. The second row of Wing-feathers was ash-coloured, the lesser rows black. The Tail was composed of twelve feathers; of which the outmost had both their tips and exterior Webs white. In the succeeding the white part by degrees grew less and less, so that the middlemost had no white at all. The length of the Tail was four inches and an half.

Its Testicles were great, an inch long; Its Guts by measure twenty six inches: Its blind Guts very short. Its Crop great, in which we found Hemp-seed: Its Stomach or Gizzard fleshy. Above the stomach the Gullet is dilated into a kind of bag, set with papillary Glandules.

§. V.

* The Indian Turtle of Aldrov. lib. 15. cap. 9.

THE Hen, excepting the Feet, which are red, and the Bill, which is black, as in the Cock, is all over white. But the Cock hath his Head, Neck, Breast, Wings as far as the quill-feathers, and Back down to the Rump reddish, but of a much fainter colour than in our common Turtle, and not at all spotted. Its bigness is almost the same, its note the same: Its Bill also like, but black. In its Eye is a most manifest difference: For in this the *Iris* is of a most lovely shining Saffron, or rather scarlet colour, which in the common Turtle is only yellow. [In that we described, the *Irides* of the Eyes were between red and yellow.]

The ring also is of a different colour; for in the *Indian* Turtles it is slender, and black, and compasses the Neck round, whereas in the common ones it is more than an inch broad, parti-coloured, and compasses not the Neck. The longer feathers of the Wings, the Rump, and whole Tail are of a dusky colour, having their shafts black, and edges white. The Belly, especially near the vent, is yellow. The Feet red, adorned with whitish tables. The Claws are dusky, inclining to yellow. They feed upon Millet. Thus far *Aldrovandus*. Of this sort of Bird we have seen many kept by the curious in Aviaries and Cages.

* I suppose he means the incisions dividing the scales

§. VI.

* The Indian Turtle or Cocotzin of Nierenberg, the Picuipinima of Marggrave: Our least Barbados Turtle.

IT is a little bigger than a *Lark*, *Nierenberg* saith, than a *Sparrow*; hath a small dusky [black] Bill, like a *Pigeon*; black Eyes, with a golden Circle. The whole Head, the upper part of the Neck, the Sides, Back, and Wings are covered with dark ash-coloured, or black and blue feathers, having black, semilunar borders. But the long feathers of its Wings, which are seen as it flies, are of a red colour, and black on one side, and in their tips. The Tail is of a good length, consisting of dusky ash-coloured feathers, yet some of them are black, and have their exterior half white. The feathers of the Belly are white, having their borders black, of the figure of a Crescent. The Legs and Feet like those of other *Doves*, but whitish. These *Pigeons* are good meat, and grow very fat. *Nierenberg* adds, that the Head is little, the Bill little and black, the Neck short, the Legs red [wherein it differs from *Marggrave's* bird,] the Claws dusky and little. The *Mexicans* gave it its name from the colour of its Wings, and the noise it makes in flying; the *Spaniards* (who call it a *Turtle*) from its murmuring voice, and the taste and quality of its flesh, although it be much less than our common *Turtle*. It cries *hu, hu*, affords good nourishment, though somewhat hard of concoction. It is found in Mountainous places, and also near Towns. It is native of the Country of *Mexico*, and very common there. They say, that it will cure a woman of jealousy, if you give it her boil'd to eat, so that she knows not what she eats. There is also another sort of this Bird, every way like it, save only that the body is fulvous and black, and the Head ash-coloured: Whence some call it *Tlapalcotli*.

This Bird is either the same with, or very like to our least Barbados Turtle, which is of the bigness of a *Lark*, being exactly equal to the figure we give of it, taken from the live bird.

§. VI.

§. VII.

The Ring-Dove, *Paltumbus torquatus*.

THAT we described weighed twenty ounces and an half. Its length from the tip of the Bill to the end of the Tail was eighteen inches: Its breadth thirty.

Its Bill yellowish, covered for some space from the Head with a red or purplish skin, wherein are the Nostrils. Above the Nostrils is as it were a white Dandroof. The Tongue is sharp-pointed, not cloven, but channel'd. The circle about the Pupil of the Eye of a pale yellow.

The Feet were bare, of a red colour, as in other *Pigeons*. The outmost Toe by a membrane joyned to the middlemost as far as the first joyned. The Legs feathered almost down to the foot.

The upper part of the Neck is adorned with a semicircular line of white, which they call a ring, and from whence the Bird took its name [Ring-Dove.] Both above and beneath this ring the Neck, as it is variously objected to the light, appears of various colours. The Head and Back are of a dark ash-colour. The lower part of the Neck, and upper part of the Breast are purplish, or red, with a certain mixture of cinereous. The Belly of a light ash-colour, inclining to white. In the Cock these colours are deeper than in the Hen.

The quill-feathers in each Wing about twenty four, of which the second is the longest: The ten foremost or outmost were black: The second, and succeeding as far as the seventh, had their utmost edges white: The rest of the hard feathers were of a dusky ash-colour. At the bottom or rise of the bastard Wing a white spot tending downwards covered the ninth, tenth, eleventh, and twelfth quill-feathers. The Tail was seven inches long, and made up of twelve feathers, the top or end, for two inches and an half, being black, the remaining part cinereous.

The Liver was divided into two Lobes: It had no Gall-bladder, but a large Gall-channel to convey the Gall into the Guts.

These Birds in Winter-time company together, and fly in flocks: They build in trees, making their Nests of a few ticks and straws. They feed upon Acorns, and also upon Corn, and Ivy and Holly berries.

§. VIII.

The Stock-Dove or Wood-Pigeon, *Oenas*, five *Vinago*.

IT is as big or bigger than a common *Pigeon*. The Cock weighed fourteen ounces and an half, was from Bill to Tail, fourteen inches long, and between the tips of the Wings extended twenty six broad. The colour and shape of the body almost the same with that of a common *Pigeon*: The Bill also like, and of equal length, of a pale red colour. The Nostrils were great and prominent. The top of the Head cinereous. The Neck covered with changeable feathers, which as they are variously objected to the light, appear of a purple or shining green; no Silk like them. The fore-part of the Breast, the Shoulders and Wings are dashed with a purplish or red-wine colour, whence it took the name [Oenas.] The Wings, Shoulders, and middle of the Back are of a dark ash-colour, the rest of the Back to the Tail of a paler. All the quill-feathers (except the four or five outmost, which are all over black, with their edges white) have their lower part cinereous, and their upper black. The Tail is five inches long, made up of twelve feathers, having their lower parts cinereous, their upper for one third of their length black. The nether side of the body, excepting the upper part of the Breast, is all cinereous. The Wings closed reach not to the end of the Tail. In both Wings are two black spots, the one upon two or three quill-feathers next the body, the other upon two or three of the covert feathers incumbent upon those quills: Both spots are on the outside the shafts, and not far from the tips of the feathers. The two outmost feathers of the Tail have the lower half of their exterior Vanes white.

The Feet are red, the Claws black: the Legs feathered down a little below the Knees. The blind Guts very short. It had no Gall-bladder that we could find; a large Craw, full of *Gromil* seeds, &c. It had a muscular Stomach, long Testicles; and a long Breast-bone.

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§. IX

§. IX.

* The Rock-Pigeon.

THIS (as Mr. *Johnson* described it to us) hath a small body, ash-coloured, and red Legs. But these two last notes are common to most Pigeons. Perchance this may be the *Columba Saxatilis* of *Aldrovandus*, called by the *Bolognese*, *Sassarolo*. It is (saith he) bigger than the Stone-Pigeons of *Varro*, of a livid colour, having a red Bill, and is altogether wild. It is sometimes taken in the Territory of *Bologna*.

§. X.

* The Dove called *Livia* by *Gesner*.

IT is in shape very like a *House-Dove*, but a little less, having red Feet, a whitish Bill, with something of Purple about the Nostrils. The feathers investing the body are all over cinereous: But the extreme feathers of the Tail are black, the middle have something of red. The Neck above, and on the sides is covered with feathers partly purple, partly green, as they are diversely exposed to the light, shining with this or that colour. The lower part of the Neck is of a colour compounded of cinereous and purple. The four longer feathers of the Wings are black, with somewhat of red; the least Wing-feathers are cinereous; the middle partly cinereous, partly black [in their ends] the last of them towards the Back are reddish. The length of this Bird from the Bill to the end of the Tail was almost fourteen inches. It differs from the *Ring-Dove* in that it is much less, and hath no white spots about the Neck and in the Wings like that.

This Bird, if it be different from the next above described is to us unknown, as also to *Aldrovandus*, who borrows the figure and description of it of *Gesner*.

CHAP. XVI.

Of Thrushes in general.

UNDER this title we comprehend also *Blackbirds* and *Starlings*. The marks common to all are, A mean bigness between *Pigeons* and *Larks*: A Bill of a moderate length and thickness, a little bending downwards: The Mouth yellow within-side; a long Tail: Promiscuous feeding upon Berries and Insects. Most of the Birds of this sort are canorous, and may be taught to imitate mans voice, or speak articulately.

This *Genus* comprehends under it three Species, 1. *Thrushes* strictly and properly so called, having an ash-coloured Back, and a spotted Breast. 2. *Blackbirds*, so called from their colour. 3. *Starlings*, whose characteristic is a broader and flatter or more depressed bill than that of *Thrushes* or *Blackbirds*.

That *Latine* Proverb, * *Turdus malum sibi ipse cecat*, spoken of those who are the cause of their own destruction, took its original from that ancient conceit, that the parasitical Plant, called *Mistletoe*, of the Berries whereof in old time Birdlime was wont to be made, sprang from the Seed voided by the Thrush. *Mistletoe* (saith *Pliny*) *few it how you will, springs not unless cast forth in the Excrements of Birds, especially the Ring-Dove, and Thrush. Such is its nature, that unless ripened in the belly of Birds it will not grow.* But that *Mistletoe* comes not at all of seed may be proved by many arguments, of which the principal is, that sometimes it grows on upright boughs, and on the under-side or that respecting the earth. He that desires further information concerning this matter may consult * *Aldrovandus* and *Scaliger*.

There are four kinds of *Thrushes* common and well known in *England*: Two abide all the year, and build with us, viz. 1. The *Mistle-bird* or *Shrute*. 2. The *Mavis* or *Song-Thrush*: Two are Birds of passage, coming in the Autumn, continuing here all Winter, and going away next Spring, never breeding with us, to wit, 1. The *Feldspar*: 2. The *Redwing*. OF *Blackbirds* or *Ouzels* *England* breeds and feeds three kinds, 1. The common *Blackbird*; 2. The *Ring-Ouzels*; 3. The *Water-Ouzel*; of which

which we treat in another place, among the Piscivorous Land-birds. The *Rock-Ouzel* of *Darbyshire* is, if I mistake not, the Female of the *Ring-Ouzel*, although it hath not the least shadow or appearance of a ring. We know but one sort of *Star*. The *Stone-Ouzel* or greater *Redstart*, as also the *Solitary Sparrow*, and *Witmal*, which we have seen beyond Seas, are strangers and unknown to *England*. To this Tribe we have subjoyned some exotic Birds out of *Marggravinus*, for their agreement in bigness or colour, &c.

CHAP. XVII.

Thrushes properly so called, having a spotted Breast.

§. I.

The Mistle-bird or Shrite; *Turdus viscivorus* major.

THIS Bird is the biggest of this kind, weighing four ounces and an half. Its length from the tip of the Bill to the end of the Tail was eleven inches. Its breadth eighteen.

Its Bill is straight, like a *Blackbird*, or for the bigness, a little shorter: The upper Chap dusky, somewhat longer than the lower: The Tongue hard, channel'd and slit at the tip, horny, and pellucid: The inside of the Mouth is yellow: The Nostrils great, almost of an Oval figure: The Irides of the Eyes hazel-coloured. The Legs and Feet yellowish; the Claws black. The outer fore-toe sticks to the middle-molt as far as the first joint, no membrane intervening. The Head is of a dusky cinereous, or lead-colour, the middle part of each feather being blacker. The Back, Tail, and Rump have some mixture of yellow. In Summer it changes colour, and becomes more cinereous. [The colour of the Head, Back, Wings, and Tail, in a word of the whole upper side seem'd to me to approach to that of *Spanish* Olives pickled while yet immature, such as are usually brought over to us.] The under-side of the body from the Bill to the Tail is speckled with pretty great blackish spots. The upper part of the Breast, the Sides, and feathers under the Tail are yellow, the middle of the Belly white.

The number of quill-feathers in each Wing is eighteen, whereof the second, being the longest, is by measure five inches. The tips of the feathers next incumbent on the quills are white. The Tail is four inches and an half long, and made up of twelve equal feathers.

It hath no *Crow*: The Gizzard is not very thick or fleshy; therein we found Maggots, Caterpillars, &c. though the Bird was killed in *January*. The Guts were great, but short: The blind Guts very little and short. It had a pale-coloured Liver, and a Gall bladder.

Sitting upon the tops of high trees, as Oaks, Elms, &c. in the Spring time it sings rarely well. It abides the year round with us in *England*, and breeds here. It is a solitary Bird, accompanying and flying only with its Mate. It is the worst meat of all its kind.

In Winter time it feeds much upon *Holly-berries*. And (which is strange) the birds of this kind are observed each to take possession of a bintree, and to be always near it, and not to permit other birds to feed on it, but to beat and drive them away: Which quality of theirs is the occasion that they are easily taken.

A late English Writer saith, that this bird makes as large a Nest as a Jay, and lays as big an Egg: Builds commonly with rotten twigs the outside of his Nest, the inside with dead Grass, Hay, or Moss, that he pulls from trees. It seldom lays above five Eggs, but four most commonly, breeds but twice a year, and hath three young ones, never above four, that I could find; She feeds all her young ones with *Mistletoe* berries, and nothing else as I could perceive, having diligently watched them for two or three hours together. This I can hardly believe, for that the old ones feed upon other berries too, and also Insects. For Convulsions or the falling sickness, kill this bird, dry him to a powder, and take the quantity of a penny weight every morning in six spoonfuls of black Cherry water, or the distilled water of *Mistletoe*-berries. The reason of this conceit is, because this bird feeds upon *Mistletoe*, which is an approved remedy for the Epilepsy. Bb 2 §. II.

* The Thrush dungs its own destruction or mischief.

* *Tom. 2. p. 585.*

§. II.

The Mavis, Thrush, or Song-thrush. *Turdus simpliciter dictus seu viscivorus minor.*

It is called viscivorous, not because it feeds upon *Mistle-berries*, but because it is like the *Mistle-bird*. It is lesser than the *Fieldfare*, scarce bigger than the *Redwing*, of three ounces weight; from the point of the Bill to the end of the Tail or the Feet, (for all is one) nine inches long. The Bill is an inch long, of a dusky colour. The Tongue, viewing it attentively, appears to be a little cloven: The Mouth within-side is yellow: The *Irides* of the Eyes hazel-coloured.

In the colour and spots of the Breast and Belly it agrees with the *Mistle-bird*: For the spots are dusky; the Breast yellowish; the Belly white. The upper surface of the body is all over dusky, with a mixture of yellow in the Wings. [I should rather call this an Olive-colour, from its likeness to that of unripe pickled *Olives*, such as are brought over to us out of *Spain*.]

This Bird for its outward shape and colour is so like the *Redwing* that they are hard to be distinguished: Only this hath more and greater spots on the Breast and Belly. *Aldrovandus* tells us, that it is proper to this kind to be spotted about the Eyes. The lesser feathers, covering the Wings underneath, are of a yellowish red colour: The lower covert-feathers have yellow tips. The quill-feathers in each Wing are in number eighteen. The Tail is three inches and an half long, and made up of twelve feathers.

The Legs and Feet are of a light brown or dusky: The soles of the Feet yellow; The exterior toe grows to the middle one as far as the first joint. It hath a Gall-bladder; the Stomach or Gizzard not so thick and fleshy as in other birds of this Tribe. Its feeding is rather upon Insects than berries: It eats also shell-snails, which are by most Naturalists reckoned among Insects. The Sex cannot be known by the colour. It abides all the year, and breeds with us in *England*. It builds its Nest outwardly of earth, moss, and straws, and within daws it with clay, laying its Eggs and Young upon the bare clay; it lays at one sitting five or six Eggs of a bluish green colour, speckled with a few small black spots, thin-set. In the Spring time it sits upon trees and sings most sweetly. It is a solitary bird like the *Sprite*. But it builds rather in hedges than high trees. Moreover, it is a silly bird, and easily taken.

For the delicate taste of its flesh it is by all highly and deservedly commended. If we stand to *Martial's* judgment, the *Thrush* is the best meat of all birds:

*Inter aves Turdus, liquid me iudice verum est,
Inter quadrupedes gloria prima lepus.*

This (saith a late English Writer) is a rare Song-bird, as well for the great variety of his notes, as his long continuance in song [at least nine months in the year.] They breed commonly thrice a year, in *April*, *May*, and *June*, but the first birds prove usually the best. They may be taken in the Nest at fourteen days old or sooner, must be kept warm and neat, not suffering them to sit upon their dung if it happen to fall into the Nest. When they are young you must feed them with raw meat, and some bread mixt and chopt together, with some bruised Hemp, wet their bread and mix it with their meat. When they are well feathered, put them in a large Cage, with two or three Perches in it, and dry Moss at the bottom; and by degrees you may give them no flesh at all, but only bread and hemp-feed. Give them fresh water twice a Week, to bathe themselves, otherwise they will not thrive. If he be not clean kept he is subject to the Cramp, like other singing birds.

§. III.

The Fieldfare; Turdus pilaris.

It weighs well nigh four ounces. Its length from the point of the Bill to the end of the Tail, or utmost Claws (for they are equally extended) is ten inches and an half: Its breadth, the Wings being spread, seventeen. The Bill is an inch long, like a *Blackbird's*, yellow save the tip, which is black: The Bills of the Hens or young birds are darker and less yellow, as in *Blackbirds*; the Tongue is rough, horny, channel'd

channel'd in the middle. The edges of the Eye-lids being yellow make a yellow circle round the Eye. The Nostrils are great. In the lower part of the nictitating membrane is a black spot. The Ears are large: The Feet black, but the Claws more: The outer Toe is joyned immediately to the middle one as far as the first joint.

It seems to be somewhat bigger than a *Blackbird*, and the second in bigness of this kind, or next to the *Mistle-bird*.

The Head, Neck, and Rump are ash-coloured, [in some of a deep blue.] The crown of the Head (sprinkled with black spots [which yet in some birds are wanting.] The Back, Shoulders, and covert feathers of the Wings are of a dark red or Chestnut-colour; the middle parts of the feathers being black. The Throat and upper part of the Breast are yellow, spotted with black, the black spots taking up the middle parts of the feathers. The bottom of the Breast and Belly are white, and less spotted. The covert-feathers of the sides under the ends of the Wings are white: Thence a red or yellow line separates the white from the black. On each Cheek it hath a black streak reaching from the Bill to the Eyes. It hath also on both sides, at the bottom of the Neck, just by the setting on of the Wings, a black spot. The number of quill-feathers, as in the rest, is eighteen, the outmost of which are black, with white edges; the inner have something of red. The covert-feathers of the inside of the Wings are white. The Tail is four inches and an half long, composed of twelve feathers, of a dark blue or blackish colour: Only the tips of the outmost feathers are white, and the edges of the middlemost ash-coloured.

The Liver is divided into two Lobes, and furnished with its Gall-bladder: The Muscles of the Gizzard are not very thick. I found no footstep of the passage for conveying the Gall into the Guts.

These Birds fly in flocks together with *Stares* and *Redwings*. They shift places according to the seasons of the year. About the beginning of Autumn come over incredible flights of them into *England*, which stay with us all Winter, and in the Spring fly all back again, not one bird remaining; inasmuch that (as far as ever I could hear) there was never seen young *Fieldfare* or *Redwing*, or so much as a Nest of those birds with us in *England*. Whither they betake themselves, or where they breed is not to us perfectly known: It is by some reported, that they breed in *Bohemia*; others tell us with much confidence, in *Sweden*. They have a hoarse chattering note, not much unlike a *Magpie*; by reason the sides of the fissure in the Palate are rough; as we conjecture.

This kind of *Thrush* (saith *Gesner*) loves to feed upon Berries of all sorts, especially those of *Juniper*. With us in *England* they are very greedy of *Holly-berries*. This bird is accounted very good meat, and preferred far before the *Mistle-bird*. In open weather they feed upon Worms, and other Insects, lying much upon Meadows and Pasture-grounds.

§. IV.

The Redwing, Swinepipe, or Wind-thrush, Turdus iliacus five Illasaut Tylas.

It is rather less than the *Mavis*; not exceeding two ounces and an half in weight. Its length from Bill-point to Tail-end is eight inches and an half: Its Bill an inch long; the upper Mandible dusky, the lower partly dusky, partly yellow. Its Tongue hard and rough, the tip being divided into many Filaments. The Mouth within-side is yellow: The *Irides* of the Eyes of a dark hazel colour. The Legs and Feet pale: The outer Toe joyned to the middle below, as in the rest of this kind.

The upper side of the body is of the same colour with that of the *Mavis*: The Breast not so much spotted. The covert-feathers of the under-side of the Wings, and of the sides of the body under the Wings, which in the *Mavis* are yellow, in this kind are of a red Orange-colour, by which mark it is chiefly distinguished from it. The belly is white, as in the *Fieldfare*: The Throat and Breast yellowish, spotted with dusky spots, which take up the middle parts of the feathers. The sides of the Breast and Belly are in like manner spotted. The spots are less, but thicker set than in the *Mavis*. Above the Eyes is a long spot or line of a clay colour, reaching from the Eyes to the hinder part of the Head.

The number of quill-feathers in each Wing, as in the rest of this kind, and almost all small birds, is eighteen: These are more red or chestnut-coloured than the rest of the

the feathers: They differ also in divers birds; for in some the edges of the outmost feathers are white, which are not so in others. The tips of the two inmost quill-feathers, as also of the second row of feathers, beginning from the tenth, are white. The Tail is three inches and an half long, consisting of twelve feathers.

The Gizzard like those of the precedent: The blind Guts in like manner very short. We found in this some remainder of the channel conveying the Yolk into the Guts. The Liver is large for the bulk of the body, and hath its Gall-bladder appendant. In the Stomach dissected we found divers sorts of Insects, Snails, &c. It comes to us from beyond Seas, as the *Fieldfare*, with which it flies in company, observing the same times of coming and returning. Whither it goes, and where it breeds is not to us certainly known: Perchance in the Mountainous parts of *Bohemia* or *Hungaria*, as *Gesner* saith he had heard. Its flesh by reason of its bitterness is less esteemed.

Dr. *Charleton* thinks they are called in *English*, *Wind-Thrushes*, because about the beginning of Winter, when strong Winds blow, by which perchance they are assisted in their passage, they come flying over to us from beyond Seas. I rather think, we borrowed that name from the *Germans*, who call this bird *Wyntroschel*, that is, *Vineyard Thrushes*, because, as *Bellonius* reports, they feed upon Grapes, and are very noisom to the Vineyards: So that they are by mistake called *Wind-Thrushes*, their true name being *Wine-Thrushes*.

§. V.

* *The Brazilian Tamatia of Marggrave.*

THIS Bird is of the bigness of a *Lark* or small *Woodpecker*, all spotted like a *Throatspeckle* or *Mavis*: On the Belly it hath white feathers, with dusky spots. It is yellow under the Throat, as also about the Neck. It hath a long, red Bill, a little dusky above, the upper Chap somewhat longer than the nether. Above the Nostrils stand up certain slender feathers like hairs or bristles. It hath four Toes in each foot, and crooked Claws. Its Head is bigger than the proportion of the body requires, as also its Bill. Not knowing better whither to refer this bird, for its agreement with *Thrushes* in bigness and colour, I have placed it here.

CHAP. XVIII.

Birds of the Thrush-kind, that are black of colour.

§. I.

The common Blackbird, Merula vulgaris.

IT is little, or nothing less than a *Fieldfare*; of four ounces weight; nine inches and an half long from the tip of the Bill to the Claws, to the end of the Tail ten and an half, and the Cock eleven.

The Bill is an inch long, in the Cock of a deep yellow; in the Hen the tip and upper part is black. The Mouth in both Sexes is yellow within. The Bill in young Cock-birds is black, and turns not perfectly yellow till they be near a year old. The circumference of the Eye-lids is also yellow. The Cock, after he hath mewed his chicken feathers, becomes coal-black; the Hen and young Cock-birds are rather brown, or of a dark russet than black: Their Breasts have something of reddish, and their Bellies of ash-colour. The Cocks while young cannot be distinguished from the Hens by their colour.

The number of quill-feathers in each Wing is eighteen, of which the fourth is the longest. The Tail is four inches and an half long, made up of twelve feathers of equal length save the two outmost, which are somewhat shorter than the rest.

The Feet are black: The outmost fore-toe and the back-toe are equal: And the outmost Toe joyned to the middlemost at bottom, as in the rest of this kind.

The Liver is divided into two Lobes, and hath its Gall-bladder annexed. The Gizzard not very fleshy nor thick, as in the rest. It feeds promiscuously upon Berries and Insects. I could not find any remainder of the Yolk-channel in the Guts.

The

The Cocks in this kind are very canorous, whistling and singing very pleasantly all the Spring and Summer-time, only their notes too loud and shrill near hand.

The Hen lays four or five Eggs, seldom more at once, of a bluish green colour, full of dusky spots and lines.

On the *Alps*, the *Appennine*, and other high Mountains are sometime found birds of this kind all over white. We ourselves saw one in a Poulterers Shop at *Rome* parti-coloured of black and white. But this we look upon as accidental: Either the coldness of the Region, or the constant intuition of Snow effecting this alteration of colour, as in *Crows*, *Ravens*, &c. So that we do not think a white *Blackbird* (pardon the seeming contradiction in adjective) to differ specifically from a black one.

The *Blackbird* builds her Nest very artificially withoutside of Moss, slender twigs, bents, and fibres of roots, cemented and joyned together with Clay instead of Glue, dawbing it also all over withinside with Clay: Yet doth she not lay her Eggs upon the bare Clay, like the *Mavis*, but lines it with a covering of small straws, bents, hair, or other soft matter, upon which she lays her Eggs, both that they might be more secure, and in less danger of breaking, and also that her Young might lie softer and warmer.

The *Blackbird* loves to wash it self, and prune its feathers with its Bill. It flies also singly for the most part: Whence it took the name *Merula* in *Latine*, being (as *Festus* and *Varro* tell us) so called because it flies and feeds *Mera*, that is, solitary or singly.

The flesh of *Blackbirds* is accounted good meat, yea, some prefer it before that of the *Thrush*. But Palate-men, and such as are critical in discerning of tastes, are of another opinion.

§. II.

The solitary Sparrow.

MEETING with a Female of this kind at *Florence* in *Italy*, I thus described it. It is of the bigness of a *Blackbird*, and for shape of body very like it, not much different in colour.

The Head and Neck were thicker than to answer the proportion of the body. The top of the Head was of a dark ash-colour. The Back was of a deep blue, almost black, only the extreme edges of the feathers were whitish. The Shoulders and covert-feathers of the Wings were of the same colour. Each Wing had eighteen quill-feathers, besides a little short one outmost, all dusky, but some had white tips. The second row of Wing-feathers had also white tips. The Tail was about four inches long, and composed of twelve black feathers. The under-side of the Body Breast, Belly, and Thighs, was all variegated with black, cinerous, and whitish transverse waved lines, so that in colour it resembled a *Cuckow*. Under the Throat, and in the upper part of the Breast no ash-colour appeared, and the white lines had something of red mingled with them. The Bill was straight, blackish, rather longer than a *Thrush* Bill, as also a little thicker and stronger. The Legs short and black: The Feet and Claws black. The Legs, Feet, and Claws in this sort seemed to me lesser than in the rest of the *Thrush-kind*. The Mouth within was yellow, the stomach filled with Grapes.

The Cocks are much more beautiful, all over of a shining blue, or bluish purple colour, as *Aldrovandus* witnesseth, and as we also observed in a Cock we saw at *Rome*, whose Back especially was of a most lovely glittering dark purple colour.

It is wont to sit alone on the tops of ancient Edifices and Roofs of Churches, singing most sweetly, especially in the Morning, whence it took its name, being supposed to be the bird spoken of, *Psalms* 102. 7. It builds also in the like places, for which *Olina* is my Author. For the excellency of its singing it is highly prized in *Italy*, specially, at *Genna* and *Milan*. It hath a whistling note like a Pipe, and may easily be taught to imitate mans voice.

§. III.

§. III.

* The Blue-bird of Bellonius, *Passeri solitario* congener, † Aldrov.

† Ornithol.
l. 15. c. 8.

* Cap. de Ce-
rulle.

There is also (saith *Gesner*) another bird akin to the *solitary Sparrow*, of the *Blackbird* kind, frequenting rocky places, whence by the *Grecians* it is called, *Petrocolaptes*, [that is, the *Rock-Onzel* or *Blackbird*] by our Country-men *Steinrotele*, esteemed in like manner for its singing. In another place he thus discourses concerning the same bird: This (*viz.* which * *Bellonius*, whose words he had cited, calls *Mernla torquata*, i. e. *Ring-Onzel*) seems to be the very same with that bird of which *Raphael Seilerius* of *Augsburg* lately wrote to me in these words. The bird which from its blue colour the *Germans* call *Blauvogel* is of the bigness of a *Star*, hath his Breast, Loins, and Neck of a lovely blue, yet darker than the *Kingsfisher*. The Back and Wings are somewhat black, yet shewing something of blue. The Bill is an inch and half long, under the Nostrils dusky, the upper Chap being hooked, and covering the nether, for the most part. The Feet are divided, as in other birds. It lives in the highest parts of the *Alps*, neither is it contented to abide in the tops of the Mountains, but chuses the most rocky and craggy places, and such as are covered with Snow, neither do we know certainly that it is found in any other place than the Mountains about the River *Albys*, especially near the City of *Innsbruck*. For this cause it is had in great account even by the Inhabitants themselves of those places, and is fed with such meat as men usually eat, and such as is usually given to *Blackbirds* and *Thrushes* designed for fowling. It speaks with an articulate voice very pleasant and various; and is it self so docile, and observes things so diligently, that it will express most things by some articulate sound. Being awakened at Midnight, and called upon by a by-stander, as if it were bidden, it will sing with a clear and loud note. Like other birds, it aims at mens Eyes, because seeing in them, as in a Looking-glass, its own image, it is affected with a desire of its like, and thinks to joyn it self in company with it. Before the Autumn, at what time other birds sit, and are buisie in bringing up their Young, together with its colour it changeth also its voice. Its colour about the beginning of Winter of blue becomes black, which about the beginning of next Spring it changes again into its own natural blue. Being fully fledg'd, and once got out of the Nest, and a little accustomed to flying, it cannot any more (as all the Fowlers affirm) by any allurements or deceit be enticed and taken, so naturally crafty it is. It makes its Nest in deep holes in very high and inaccessible solitudes, having found a secure place, to which it may safely commit it self and its Young. And by its cunning doth not only remove it from the access of men by placing it on the highest ridges of the Mountains, but also hide it in deep Caverns from the *Chamois*, and other wild beasts, and there it feeds three or four Young with worms, till it brings them out of the Nest, and turns them loose to shift for themselves. Now the Fowlers having either by chance, or by lying in wait, found out the place, taking with them a long, round, smooth stilt or stake, made of a singular piece of wood, hard to be found (such as the climbers of Rocks and hunters of *Chamois* are wont to make use of to assist them in getting up the crags and cliffs of Rocks) mount up there where you would not think it possible for them to find room to set one foot. And to omit nothing, they wrap their heads with cloth, covering their faces so far that they may see side-ways, to avoid dizziness; and this they do partly to fence them against the old birds, partly, and chiefly (this being the true cause of their so doing) to hinder their prospect any ways but just forward, to see where they are to pitch their stake, or clap on their hands. So at length, not without extreme toil and danger, they arrive at the Nest, which with that long pole or stake I mentioned they draw up out of the deep hole where it was placed, and carry away with them, cherishing, and bringing the Young up at their own houses: And afterwards either sell them dear, or present them to Gentlemen and great persons of their knowledge. Thus far *Seilerius*. I suspect that this very bird, which *Gesner* calls *Blauvogel*, is the same which about *Chur* in the *Grisons* Country and elsewhere is called *Steinrotele*, or near akin to it.

* Lib. 1. Cap. 10.
c. 10. 11.

* *Bellonius*, who thinks this bird to be the *Cyanus* or (as *Gaza* translates it) the *Ceruleus* of *Aristotle*, writes thereof in this manner. That bird which *Aristotle* calls *Cyanus*, *Pliny*, *Ceruleus*, because it haunts among the Rocks of the high Mountains, and is like a *Blackbird*, is now by the *Grecians* commonly called *Petrocolaptes*, that

that is, the *Rock-Onzel*. It is lesser than a *Blackbird*, and blue all over, kept in Cages, and highly esteemed for its singing. Its voice is the same with the *Blackbirds*. It hath no *French* name, because it is not found in *France*, nor yet in *Italy*, unless brought thither in Cages. It is sometimes taken out of the Nest to be taught so speak articulately. * In another place, where he also treats professedly of this bird, adding a figure of it; although (saith he) we call the bird by *Aristotle* entitled *Cyanus*, by *Gaza* rendered *Ceruleus*, In *French* *Merle bleu*, yet we do not this as if it were known to *France*; but because of the Countreimen of *Epidaurus*, who use divers Idioms, some who speak *Italian* call it, * *Merlo biavo*, others who speak *Greek*, *Petrocolaptes*, others who speak *Dalmatic* call it simply, *Merle*. Kept in a Cage it sings more sweetly even than a *Blackbird*. For which reason the Countreimen of *Illyricum*, who live among the Rocks, take them out of the Nests, and carry them to the Cities to sell. It is not found in *France*, unless brought in from abroad. It builds in the tops of Mountains, as we observed in *Candy*, *Citharea*, *Coregra*, *Zacynthus*, and *Babea*, now commonly called *Negroponte*. *Aristotle* also in the fore-quoted place making mention of it, saith it was commonly seen among the Rocks in *Seyros*. *Aristotle* composing his History of Animals at *Athens*, sent abroad men through divers Countries to search out all kinds of living Creatures: In *Seyros* the Mountains are craggy, with many Rocks. But to make a brief, compendious description of this bird, we need but imagine a small *Blackbird* of a blue colour; for just such a one is this bird. It is full of tongue, and seldom descends into the plain Country. It breeds for the most part five Young, and never more. It affords as good and better nourishment than a *Blackbird*, flies swifter, and uses the same food. All this out of *Bellonius*; whom *Aldrovandus* pronounces mistaken, in that he thought this bird to be the *Cyanus* of *Aristotle*. Himself, with *Gesner*, deeming the *Cyanus* of *Aristotle* to be of the *Woodpecker* kind: Which how he proves see in this place.

Turner conjectures the *Ceruleus* of *Aristotle* to be that bird which is called in *English*, a *Clot-bird*, a *Smatch*, an *Arling*, a *Stonecheck*, and in *High Dutch*, *Ein Brechvogel*. This he saith in *England* breeds in *Coney-burrows*, and under stones, and appears not in Winter. The *English* names and place of building argue *Turner* to have meant the common *Oenanthe* or *White-tail*; which is a far different bird from the *Ceruleus* of *Bellonius*.

For my part, to speak freely what I think, I judge the *Blauvogel* of *Gesner* to be the very same bird with the *solitary Sparrow*; but the *Ceruleus* of *Bellonius* to be a bird specifically different, and which I have not yet seen alive, though I have often seen its picture.

§. IV.

The Indian Mockbird, *Ceruleus Indicus*.

WE saw this Bird dried in *Tradescants* Cabinet. It is of the bigness of a common *Lark*, hath a straight sharp Bill, a long Tail: And is all over of a blue colour. Upon second thoughts, however *Tradescant* might put the Epithete of *Indian* upon this bird, I judge it to be no other than the *Ceruleus* or *Blue Onzel* of *Bellonius*, described in the precedent Article.

§. V.

* *Aldrovandus* his *Brazilian Merula*, Book 16. Chap. 16.

Bellonius figures this bird among the *Merula*, induced only by this reason, that those who bring it out of *Brazil* into *Europe* call it, the *Brazilian Blackbird*. Wherefore seeing he speaks nothing concerning the nature of the Bird, and it is alike unknown to me, I also adjoyn it to the *Merula*, although in the shortness, or rather crookedness, of its Bill it differs much from them. Those (saith *Bellonius*) who trade in Countries newly discovered, bring back thence such strange rarities as they think will sell dear with us here: But because they cannot bring the birds themselves alive in Cages, therefore they flay off the skins of such as are more beautiful than the rest, as this is, and bringing them over make a great gain of the sale of them; especially of this which they call, the *Brazilian Blackbird*; though in bigness it differs from a *Blackbird*. The colour of the whole body, except the Tail and Wings, which

Cc are

are black; is so deep [perchance by the word *intense* he may mean bright] a red, that it exceeds all other rednesses: The Tail is long; the Feet and Legs black; The Bill short, as in a Sparrow. The feathers are red to the very bottom. That which *Aldrovandus* describes, perchance from a picture, was in some things different from *Bellonius* his bird. For, faith he, the Wings are not all over black, but all the upper feathers by the shoulders of a deep red. Next to them are some black ones, then red ones again; the subsequent, viz. all the great feathers, being black, as is also the Tail. The Bill also is not so short as in Sparrows, yet thick, and remarkably crooked, without of a dusky colour, within yellow, as I conjecture from the colour of the corners of the mouth [*videtur*]. Moreover, the Feet are not black, but of an ash-colour, only a little dusky, being great for the proportion of the Legs: The Claws short, but crooked, of the same colour.

We have seen in *Tradescanti* Cabinet a red *Indian* bird dried, of the bigness almost of a *Merula*, having a long Tail, which perchance is the same with the bird in this Article described.

§. VI.

* The Rose or Carnation-coloured Onzel of *Aldrov.* lib. 16. cap. 15.

THIS bird our Fowlers call, the *Sea-Starling*. It is seen sometimes in our fields, and is much among dung-heaps. To me it seems rather to be a kind of Onzel [*Merula*] than *Starling*. For a *Starling* is spotted, which this is not. It is somewhat less than a *Blackbird*, hath its Back, Breast, and Wings above of a Rose or Carnation colour, its Head tufted, its Wings and Tail black, the prime feathers being near a Chestnut colour: The Bill next the Head black, else of a flesh colour: The Feet of a deep yellow or Saffron-colour. The Cock in this kind is of a more lively and lovely colour. The head of the Hen is in colour like to the Cocks, but the Neck, Wings, and Tail not so black as his. They become very fat, and are accounted good meat.

We have not as yet seen this bird, neither do we remember to have elsewhere read or heard any thing of it.

§. VII.

The red-breasted Indian Blackbird, perchance the *Jacupu* of *Marggrave*.

WE saw the Case of this bird in *Tradescanti* Cabinet. It was of the bigness and shape of a *Blackbird*, as far as I could judge by the dried skin. The colour of the whole upper side was black; only the edges of the feathers about the Rump were ash-coloured. The Breast was of a scarlet colour: The Bill like a *Blackbird*: The Tail also long, and like a *Blackbird*.

I take this to be the same bird, which *Marggrave* describes under the title of *Jacupu* of the *Brazilians*, though he attribute to it only the bigness of a *Lark*. It hath (faith he) a long Tail, shorter Wings, short and black Legs, with sharp Claws on the four toes: A Bill a little crooked and black, half an inch long. The whole body is covered with shining black feathers; yet under the Throat spots of a Vermilion colour are mingled with the black. This bird differs from ours in its smallness, and the shortness of its Bill.

§. VIII.

The Ring-Onzel, *Merula torquata*.

IT is like, and equal to, or somewhat bigger than the common *Blackbird*: From Bill to Tail eleven inches long, to the end of the Feet ten and a quarter; the Wings extended were by measure seventeen inches. The Bill more than an inch long, of a dark dusky or blackish colour. The mouth yellow within side: The Tongue rough. The *brides* of the Eyes are of a dark hazel colour: The Legs and Feet dusky. The outer *Tocis* is joined to the middle as far as to the first joint. The colour of the upper side of the body is a dark brown, or ruflet, inclining to black. The feathers covering the Breast and Belly are marked with a long whitish spot down the shaft, having

having also white edges. The Ring or Collar is below the Throat, just above the Breast, of a white colour, an inch broad, of the form of a Crescent, the horns ending at the sides of the Neck.

It hath eighteen quill-feathers in each Wing; twelve in the Tail, the outmost being a little shorter than the rest; four inches long. The exterior feathers of the Tail are blacker than the middlemost. The small feathers under the Wings whitish.

[In a bird that I described at *Rome* the edges of the prime feathers of the Wings, as also of the covert-feathers of the Head and Wings were cinereous. The ring also was not white, but ash-coloured. I suppose this was either a young bird, or a Hen.]

It hath a large Gall, and a round Spleen: In the Stomach we found Insects, and Berries like to Currans. These Birds are common in the Alps in *Rhetia* and *Switzerland*: They are also found in the mountainous parts of *Derbyshire*, *Yorkshire*, and elsewhere in the North of England.

They say that the Female of this kind hath no ring: Whence I perswade myself that the bird which I sometimes described for the *Merula Saxatilis* or *Montana*, that is, the *Rock-Onzel* of *Gesner*, p. 584. was no other than a *Hen Ring-Onzel*.

It nearly resembles the common *Blackbird* in bigness, figure, and colour; yet is in some things manifestly different; viz. it is a thought bigger, hath a longer body, and not so dark a colour. Its length from the tip of the Bill to the end of the Tail was ten inches and an half, to the end of the Claws nine and an half: Its breadth one foot and five inches: Its weight three ounces and two drachms. The top of the Head, the Shoulders, Back, Wings, and Tail, in a word, the whole upper side was of a dark brown or dusky colour. The number of quill-feathers in each Wing eighteen. The Tail was four inches and an half long, not forked, black, made up of twelve feathers. The under side, viz. the Breast, Belly, Sides, Thighs, and under-coverts of the Wings, particoloured of brown and white, or rather cinereous; the middle part of each feather being brown, and the borders round about cinereous.

Its Bill is every way like the common *Blackbird*, excepting the colour which in this is of a dark brown, or blackish. The inside of the mouth, as in that, yellow. The Legs are of a moderate length, and dusky colour, as also the Feet and Claws.

The Guts indifferent large, but not very long, and consequently not having many revolutions: The blind Guts small, white, and very short, as in the rest of this kind. The Stomach or Gizzard was of a moderate bigness, filled partly with Insects, partly with the purple juice of Bill-berries, which had also tinged all the excrements of the Guts.

It is usually conversant about the Rocks and steep Cliffs of high mountains. This we described was shot by *Fr. Jessop* Esq; on a Cliff or Scar, called *Rive-edge*, where they dig Mill-stones, not far from a Village called *Hathers-edge* in the Mountains of the Peak of *Derbyshire*, where the Inhabitants call it *Rock-Onzel*.

§. IX.

* The Rock Onzel, or Mountain Onzel of *Gesner*, called in *High Dutch*, *Berg-Amzel*, *Merula Saxatilis* seu *Montana*.

IT differs from the *Ring-Onzel*, 1. In that it wants a Ring. 2. In that the Throat is *red, with black spots, the Belly is cinereous, with black spots. 3. That the extreme edges of the great Wing-feathers are whitish, and the lesser rows have sometimes white spots in their middle about their shafts. But these differences are not to me so considerable, as to induce me to believe that this bird is a *Species* different from the *Ring-Onzel*; at least if it be true, that the Hen in that kind wants a ring, and differs other ways in colour from the Cock, as we have been informed. Yet will we not be very confident or positive, but refer it to further inquiry and observation.

To these may be added *Aldrovandus* his 1. **MERULA BICOLOR*, described lib. 16. cap. 12. varied with two colours especially, viz. dusky or blackish, and reddish yellow. 2. †*MERULA CONGENER*, *Aldrov.* lib. 16. cap. 13. having a red line near the Bill. 3. **MERULA CONGENER ALIA*, in *Chap.* 14. of the same Book, like to the ash-coloured *Butcher-bird*. Which, because we have not seen, nor read of elsewhere, we omit: Whosoever pleases may look out their figures and descriptions in the places cited. The second of these *Aldrovandus* saw only painted, neither did he see the first alive.

* *Rufa*, it may be reddened ruflet.

* Onzel of two colours.

† Of kin to the Onzel.
* Another bird of kin to the Onzel.

CHAP. XIX.

Of the Starling, and Birds akin to it.

§. I.

A Stare or Starling, Sturnus.

THe Cock weighed three ounces and an half, the Hen three. From Bill to Claws it was nine inches long, to Tail end eight and three quarters. Its breadth was sixteen inches. It is of the bigness and shape of a common *Blackbird*. Its Bill from the tip to the angles of the mouth an inch and a quarter long, in the Cock of a pale yellow, in the Hen dusky, broader and more depressed than in *Thrushes* or *Blackbirds*, by which * mark especially it differs from them. The upper Mandible is equal to the nether: The Tongue is hard, horny, and cloven: The *Irides* of the Eyes of a hazel colour, whiter on the upper part. It hath the nictating membrane, which I believe few birds want. The Legs and Feet are yellowish, [rather of a flesh colour:] The Claws blackish. The outer and inner fore-toe are equal to each other; and the outer joyned to the middle toe as far as the first articulation. The Legs feathered down to the Knees.

The tips of the feathers on the Neck and Back are yellow: The feathers under the Tail cinereous, else they are black all the body over, with a certain blue or purple gloss, varying as it is variously exposed to the light. In the Hen the tips of the feathers on the Breast and Belly, to the very Throat, are white. In the Cock the Back participates more of purple, the Rump of green; only the lower Belly is more spotted.

All the quill-feathers are dusky; but the edges of the third, and subsequeut to the tenth, and from the fifteenth again to the last are more dark. The covert-feathers of the Wings glister, and the tips of the lesser coverts are yellow. The feathers covering the under side of the Wings are dusky, having pale-yellow edges.

The Tail is three inches long, made up of twelve dusky feathers with pale yellow edges: It lays four or five Eggs lightly tintured with a greenish blue.

The blind Guts as in the rest of this kind are very short and small, nearer to the Fundament than in others. The muscle of the Gizzard not very thick: The Guts thirteen inches long. It feeds upon Beetles, Worms, and other Insects. It hath a Gall-bladder.

Stares are gregarious birds, living and flying together in great flocks. They company also with *Redwings* and *Fieldfares*; yet do they not fly away with them, but abide with us all Summer, breeding in the holes of Towers, Houses, Trees, &c.

This kind sometimes varies in colour. For we have seen in *Wales* two white *Starlings*; one with a black Head, and all the rest of the body white at *Aberdare*, a little Village in *Carnarvonshire*. *Stares* are not eaten in *England* by reason of the bitterness of their flesh: The *Italians*, and other Outlandish people are not so squeamish, but they can away with them, and make a dish of them for all that. It is a notable bird at imitating mans voice, and speaking articulately.

§. II.

* Bontius his Indian Stare.

IT resembles our Country *Stare*, in the Sea-green and dark blue feathers, spotted with cinereous spots; but it hath a yellow Crest on the Neck, and its Head is set with black soft feathers, that feeling of it you would think you touched Velvet. It imitates mans voice much more accurately than a *Parrot*, so that oftentimes it is troublesome with its prattling.

§. III.

The greater *Redstart* of *Olina*, called by *Aldrovand*, * *Merula Saxatilis*, at *Florence*, † *Tordo Marino*, at *Vienna*, *Stein-Reitling*.

* i.e. The Rock Ouzel.
† i.e. The Sea-Thrush.

IT is equal in bigness, and like in shape to a *Starling*. Its length from the tip of the Bill to the Claws nine inches and an half. The measure of the Wings extended fourteen. The Bill is more than an inch long, broad and flat, as in *Stares*, not round, and rising up in a ridge, as in *Blackbirds*, black of colour: The upper Chap longer, sharp-pointed, and somewhat crooked. The mouth within yellow. The Tongue a little cleft at the end. The Legs and Feet of a lead colour; the Claws black; the soles of the feet yellow. The outer Toe grows or is fastened immediately to the middle one as far as the first joint; the inner toe is a little shorter than the outer. The Chin underneath is whitish: The tips of the feathers on the Breast cinereous. Beneath the Breast is a transverse black line; below which the Plumage is of a red or deep Orange-tawny colour. The Head and Back brown, the tips of the feathers being cinereous. The quill-feathers of the Wings of a black brown, with reddish tips. The Tail consists of twelve feathers, of a red tawny or Orange colour, whence it took the name of the greater *Redstart*. The lesser feathers under the Wings are of the like colour.

Its Stomach was fleshy, and stuffed with the stones of certain berries, we knew not what. Its Guts were eleven inches long. It imitates mans voice, learning to speak articulately, like the *Stare*.

The Hens are paler-coloured; above being of a Mouse-dun, spotted with white spots; underneath rather hoary. Those parts which in the Males are fulvous, in the Females are of a pale yellow.

Lighting upon three or four of these birds at *Florence*, comparing them together, [J. R.] described them as exactly as I could in these words.

It is equal in bigness, and like in shape to a *Thrush*. Its colour is various, on the top of the Head and Neck mingled of a dirty white or ash-colour and brown, so that it appears grey or hoary. Viewing each single feather, the bottom or lower part is blue; the middle part about the shaft black, which black line near the tip of the feather is crossed by another, which together represent the figure of the letter T in each feather. The very tips of all are white. The colour that fills up the angles of the T-like mark is dusky. These colours in the Neck, Shoulders, upper part of the Back, and covert-feathers of the Wings are more bright and conspicuous. The feathers on the middle of the Back in the Cock-birds are marked about their middles with a large white spot, above which is a cross line of blue, then one of black, and lastly, their tips are red. The bottom of the Back about the Rump is more cinereous or blue. The feathers incumbent on the Tail are red, with white tips. The great feathers of the Wings have their tips and exterior edges white, else they are black: The greater covert-feathers are also of the same colour. The feathers covering the under side of the Wings are of a pale red or yellow colour.

The Tail is short, scarce exceeding three inches, made up of twelve feathers of equal length, all red or fulvous, excepting the two middle, that are dusky, which yet in some birds are also above half red. It is here to be observed, that all the Tail-feathers have their outer edges toward the top, of the same colour with the middle feathers.

The nether side of the body, viz. the Throat, Breast, Belly, Thighs, are parti-coloured of white or grey, black and yellow. [In some Cock-birds the whole Belly was of a fulvous colour, speckled with many white spots, and a few black ones.] The Throat and upper part of the Breast are darker than the Belly, for that the fore-mentioned colours are there more mingled and confounded, whereas in the belly they are more distinct, and make greater spots. If you heed each feather, you shall find the bottom to be blue, in the middle a yellow spot, encompassed with a black line, and the top white. The Wings are long, reaching almost to the end of the Tail. The description of the Bill and Legs we have already given in Mr. *Willughby's* words, and have nothing further to add concerning them.

It is said to abide and build in mountainous places. It is kept in Cages for its singing. I suspect that *Bellonius* his solitary *Sparrow* is the same with this bird, though the description answers not exactly in all things.

§. IV.

* This we make the characteristic note of this kind.

§. IV.

* The *Brazilian* Pitanga guacu, called by the Portuguese, Bemtere, *Marggrav.*

* *Exterius acuminatum, I confess I do not well understand what our Author means by these words.*

IN bigness it is equal to a *Stare*; hath a thick, broad, Pyramidal Bill, a little more than an inch long, * outwardly sharp: A broad, compressed Head: A short Neck, which fitting it contracts or draws up: A body near two inches and an half long: The Legs and Feet dusky: Four Toes disposed in the usual manner. The Head, upper side of the Neck, the whole Back, Wings, and Tail of a dark brown or black, mingled with a little green. The under side of the Neck, the Breast, and lower Belly have yellow feathers. But above, by the Head it hath a Crown [like that of a Monk] of a white colour. It hath a loud shrill cry. Some of these birds have on the top of their Heads a yellow spot, and some have it partly of a clay colour; else in all things like. This kind is called by the *Brazilians*, *Cuiriri*.

CHAP. XX.

Atinga guacu mucu of Marggrave.

IT is about the bigness of a *Throftle*: Hath a great Head, a Neck of a moderate length, a body three inches long: The Bill a little hooked, of a colour mingled of green and yellow, sanguine Eyes, with a black Pupil. The Legs are ash-coloured, of a moderate length, above [the Knees I suppose he means] covered with feathers: In the Feet four Toes disposed after the usual manner: an exceeding long Tail, viz. of about nine inches, consisting of about ten feathers; of which some of the lower are shorter than the upper. The whole Head, Neck, Back, Wings, and Tail have brown or * fuliginous feathers, which in the Tail are darker-coloured than therest. The end of each feather of the Tail, for about half an inch, is white, and between the white and red [part] shaded with black. The Throat, Breast, lower Belly, and Thighs are covered with ash-coloured feathers. On the Head it hath long feathers, which it can set up like two horns. It is a bird remarkable for the length of its Tail. For its agreement in bigness, its Bill, and some other accidents, we have subjoined it to the *Thrush-kind*.

* Of the colour of Soot.

CHAP. XXI.

The *Witwall*, as it is by some called, *Galbula seu Picus nidum suspensens*, *Adrov.* *Oriolus Alberti*; *Chloereus Aristotelis*, & *Icterus Plinii*, in *Adrovandus* his judgment.

THIS bird from the beginning of the Bill to the end of the Tail was by measure ten inches long: Equal in magnitude to, or somewhat bigger than a *Thrush*: Its Bill more than an inch long, red, like a *Thrush*, but bigger, and longer: Its Tongue cloven and rough: The *Irides* of its Eyes red: Its Legs, Feet, and Toes of a Lead-colour. The hind-Toe near the rife of it was broad and callous. The outer Toe joyned to the middle, as in the rest of this kind, up to the first joyn.

The quill-feathers of the Wings were black: But the tips of the fifth, sixth, and seventh, also of the tenth, and four subsequent white, and the utmost edges of the third and fourth. The foremost feathers of the second row were almost half way of a pale yellow: Else the upper surface of the whole Wing black. The twelve feathers of the Tail were of equal length, viz. about three inches and an half: The two middlemost black, the rest had their upper half yellow, their lower black. All the body beside was of a bright yellow, very beautiful to behold: So that for the lustre and elegance of its colours it scarce gives place to any of the *American* birds. Between the Eyes and Nostrils on each side it had a black spot.

In

In the Female the colours are not so fair and lively, the yellow being mingled with black and brown, the Breast shaded with dusky lines: The lesser rows of Wing-feathers, and the two middle feathers of the Tail green. The young ones also are greener, and have their Breasts spotted.

The Guts are sixteen inches long, great and lax: the blind Guts very small and short: The Testicles round. In the Belly we found Caterpillars.

We shot this bird near *Frankford* in *Germany*. Afterwards we saw many of them at *Naples* in the Poulterers Shops: Whence we guess that they are frequent in the neighbouring Country.

The structure of the Nest, and how artificially it hangs it, see in *Aldrovand.* The *Low Dutch* call this bird by a very fit name, *Goutmerle*, that is, the golden Onzel: For it agrees with *Thrushes* or *Blackbirds*, in the shape of the Bill and the whole body; in the bigness, also food, and manner of living. It is called *Galbula* or *Galgulus*, from its yellow colour.

It is a bird of passage. *Gesner* writes, that it comes into his Country for the most part in *May*, but sometimes also in *April*: After whose coming they have certain hope that there will be no more frosts. Whence it appears, that it delights in hot places and seasons. It feeds wonderfully fat, hath very delicate flesh, and yields wholesome nourishment; and no wonder, sith it is akin to the *Thrushes*, and uses the same food, viz. Insects and Berries.

CHAP. XXII.

* *Matucui of Marggravius.*

IT is of the bigness of a *Stare*: Hath a short Neck, a strong Breast, short Legs, a Tail two inches and an half long. It hath a straight, strong Bill, the upper Chap whereof is a little prominent, the point inclining downwards, of a Vermilion colour. The whole Head, upper side of the Neck, Back, Wings, and Tail are brown, spotted with a pale yellow, partly speckled like a *Sparrow-Hawk*. Under the Throat it hath yellow feathers. The Breast and Belly are white, speckled with brown. The Legs of a dark ash-colour.

CHAP. XXIII.

* *Guirapunga of Marggrave.*

THE cry of this Bird may be heard a great way off. It is bigger than the *Mistle-bird*, almost equal to a *Pigeon*: Hath a Bill an inch long, and pretty broad, * sharp-pointed; the upper part a little prominent above the lower, and bending downward, black, having wide or open Nostrils. Its Mouth is large, the slit reaching as far as the Eyes; so that the aperture of the Mouth with the Bill forms a triangle. It hath a short Tongue; Eyes between black and blue. Under the Throat, (which is broad) and in the lower part of the Neck it hath many black fleshy Wattles an inch long, hanging down before, of the figure of the point of a Spear. The Head is covered with dark brown feathers: The whole Neck, Breast, Belly, Back, and Thighs with ash-coloured, wherewith (especially in the Back) are some black ones mixed, and toward the Tail also green ones. It hath a Tail three inches long, consisting of ash-coloured and black feathers mingled with a little green. The Wings (which end not far below the rife of the Tail) are first black, then brown, some dark green feathers being intermingled. The lower Legs are black and above an inch long. It hath four Toes in each foot like other birds, with black Claws. The Breast is as it were divided into two, having a valley or furrow all along the middle. The Windpipe is large, whence also it hath a loud and strong cry.

It hath a double note, which it utters promiscuously; one like that of a Hammer striking a Wedge in the Woods, (*cick, cock*;) The other, as if one should strike a crack Bell, [*Kur, kur, kur, &c.*] It cries only in the middle of Summer, in *December* and the beginning of *January* for five or six Weeks, in other Months it is not heard, whence by the *Portugues* it is called *Ave de verano*.

The

The Hen *Guirapunga* is of the bigness and figure of our *Throfile*, and alike fleshy: Hath a broad Head; a Bill also broad, and not very long: A wide mouth when it gapes: A black Bill: Pretty great Eyes: A Tail some three inches long, or something more; neither do the Wings reach to the end thereof. The whole bird is clothed with blackish feathers, with which some brown and pale green ones are mingled; yet the colour in the Back is browner, in the Throat, Breast, and Belly a more delayed green, and mingled like that of a *Throfile*. It is a fat and well-fleshed bird. The Legs and Feet are black, in other particulars not different from the common rule.

BOOK I. PART II. SECT. II.

Of small Birds.

Of small Birds in general.

Small Birds in general may be divided into slender-bill'd, which are for the most part Insectivorous; and such as have short and thick Bills, which are for the most part Phytivorous, living upon the fruits and seeds of Plants. The first kind are commonly called soft-beak'd, the second hard-beak'd birds.

* By heel is meant the claw of the back-toe.

Of both kinds there are many subalternate Species, viz. of slender-bill'd, *Larks*, whose characteristic notes are a very long * heel; earthy coloured feathers, mounting up in the air, and flinging as they fly; *Swallows*, whose marks are a short Bill, a wide Mouth, long Wings, a forked Tail, short and small Legs and Feet; swift, and almost continual flight: The *Hedge-Sparrow*, *Redstart*, *Robin-red-breast*, and many others, which we divide into two Classes or ranks. The first is of such whose Tail is only of one colour; the second of those whose Tails are particoloured; either all the feathers, or the outmost on each side being in part white.

Of thick-bill'd Birds the kinds are, the *Sparrow*, whose marks are an earthy or testaceous colour, a Bill a little crooked, feeding upon Corn, the *Hawfinch*, the *Greenfinch*, the *Shel-apple* or *Sheld-dapple*, the *Linnet*, the *Chaffinch*, the *Goldfinch*, the *Siskin*, &c. whose characteristics we will give when we come to treat of them.

An Addition concerning singing birds in general.

America (as *Marggravius* observes) breeds more fair-coloured birds, but fewer singing birds than Europe.

As we have distinguished small birds in general into soft and hard beak'd, so may we also distinguish singing birds. The soft-beak'd are, The *Mavis* or *Song-Thrush*; the *Blackbird*; the *solitary Sparrow*, which is a stranger to England; the *Nightingale*, esteemed the Prince of all singing birds, of the rearing and ordering of which we shall treat at large when we come to his History; the *Ske-Lark*; the *Wood-Lark*; the *Tit-Lark*; the *Robin-red-breast*; the *Wren*; the *Black-cap*; the *Beccafico*; the *Redstart*; and the *Hedge-Sparrow*.

The hard-beak'd are, The *Canary bird*; the *Linnet*; the *Chaffinch*; the *Goldfinch*; the *Greenfinch*; the *Bulfinch*; the *Brambling*; the *Hortulane*; the *Siskin*; the *Citril*; the *Hirngil*; the *Yellow-hammer*.

In all singing birds in general observe to keep them very neat and cleanly; and therefore often to shift the straw, moss, gravel, or whatever else you put in the bottoms of their Cages; and to give them fresh water, and meat often; for nothing offends them more than the stench of their own dung, or putrid meat and water. Besides, if their Cages be foul, they will be apt to clog their Feet with their dung, which often rots off their toes, at least causes the Cramp, Gout, and other infirmities. *Aldrovandus* advises to put in their Cages a piece of Pumice stone, or old rubbish, to cleanse and whet their Bills upon, which otherwise will be apt to grow blunt.

All Birds (saith he) are wont to swallow something out of the earth to cleanse their bodies; I rather think they use only to swallow some grit or gravel, to assist them in grinding their meat in their Gizzards; and therefore it is needful to put fine gravel in their Cages.

In the rearing of young ones from the Nest observe, 1. To feed them often, but to give them but little at a time, as the old ones do, for fear of over-charging their stomachs, and causing them to cast up their meat. 2. After they begin to feed themselves, give not over feeding them presently, lest they neglect and starve themselves.

Hard-beak'd birds are to be fed with seeds, and of all feeds *Aldrovandus* commends *Canary-feed*, as the most savoury, pleasant, and wholesome of all other, which makes them sing with greater alacrity, and also live long: For want of which you may (saith he) give them Millet, Panic, Spelt, Off-corn-wheat, Hemp-feed, and Lime-feed; he might have added Rape-feed, Cole-feed, and many others.

Soft-beak'd birds are to be fed with heart of Veal or Weather, Worms, Flies, and such kind of Insects, as also that sort of paste the receipt whereof we shall give you in the History of the *Nightingale*.

In preparing their meat have a care to free it from all skin, fat, and Sinews, or strings, which will be apt to stick in their Throats, or twine about their Tongues, and cause them to fall off their meat, &c.

Aldrovandus method to make birds sing in Autumn or Winter.

About the beginning of May purge them with Beet, first mingling the juyce of it with their water; then giving them no water at all, but only hanging up Beet-leaves in their Cages, putting in also a handful of earth and rubbish. Then by degrees accustom them to darkness for ten days, putting them still in places darker and darker, and at last in a room perfectly dark, that hath not the least chink to let in light. During all the time of their imprisonment in this dungeon, no body must come in there but their Keeper, and he with a Candle once in three days to give fresh water and meat, and to cleanse their Cages: [It would be convenient to have two Cages, and change them every twentieth day.] Every fourth day give them a Beet-leaf, and every tenth day juyce of Beet, else they will incur the danger of growing blind. In this manner they must be kept till about the tenth of August, and then new purged, after the manner we before prescribed; and then by degrees again accustom them to the light, but by no means exposed to the Sun-beams for fear of blinding them. This doing you shall be Master of your purpose.

Diseases incident to singing birds, and their remedies.

1. **Lindnes**, which if radicated and confirmed is incurable; taken at first, when their Eyes begin to water, may be remedied by giving them Sugar dissolved in the juyce of Beet every other day for four days, and putting into their Cages a twig of Figtree to rub their Eyes against; which by the instinct of nature they will use to do.

2. The *Falling sickness*, which *Aldrovandus* also accounts an incurable disease. If they escape the first fit he advises presently to cut their Claws to the quick, and sprinkle them with Wine, and to keep them from the heat of the Sun all Summer.

3. *Fractures* of the bones of their Legs or Wings: In which he advises by no means to splinter or bind up the part; but only to take away the Perches out of their Cages, and to set their meat and water in the bottom of their Cages; and keep them where no company comes to scare them.

4. *Swellings* and inflammations or impostumes.

5. An *Hydropical distemper*.

6. The *Gout*, known by roughness and swellings in their Legs and Feet, especially their Knees.

7. The *Phthisic* or subtle disease, in which their breast veins are distended, but the flesh fallen away, and their Bellies swelled as though they had the Dropsic. In all these distempers *Aldrovandus* advises still to purge with Beet, as was before prescribed.

8. *Aphthe*, or small Ulcers in their mouths, for the cure of which dissolve Pumpion seeds in water, and give it them for their drink for three or four days, and when you perceive them to mend, give them fine Loaf-Sugar in like manner dissolved in water.

9. The *Pip*, which may be known by the hardness of the end of their Tongue: Small birds (saith a late English Writer) that feed upon Seeds are very seldom subject

to this disease; but most commonly *Throats*, *Blackbirds*, and *Stares*, which feed upon soft meat. I have also known *Nightingales* to be troubled with it, that have been fed too much with Eggs hard-boiled. For the remedy of this (for the bird will never eat his meat kindly, nor sing with any stomach so long as he hath it) take the bird in your hand, and having opened his Bill, with a Needle take that hardness off from the top of his Tongue, and the sides of his Bill also; and give him as in the precedent disease.

10. The disease of the *Rump*, known by the birds growing melancholy, and abstaining from singing. The best remedy whereof is to cut off that sharp part that lies upon the top of the Rump, and give him some cleansing thing in his meat, and refreshing thing in his water.

11. The flux of the *Belly* or *Scouring*. For remedy whereof pluck off the Tail-feathers, and the feathers about the Vent, and anoint the place with Oyl or Capons grease, and if they be hard-beak'd birds, instead of Hemp-seed, or Rape-seed, give them Pumpkin seeds [or red Beet seeds] for two or three days; if soft-beak'd, give them nothing but the yolks of hard-boyl'd Eggs.

12. *Moulting* or casting their feathers is a kind of disease common to all birds. At that time they all grow melancholy, and cease to sing, and forsake their meat, and some of them will be very sick. For help of this *Aldrovand* advises to sprinkle them twice or thrice a Week with Wine not too strong, then setting them in the Sun till they be dry, and after putting some greens about their Cage.

To preserve birds of all kinds in health, *Aldrovand* saith, it would be useful to purge them once a month with Pumpkin feeds decorticated, Lettuce, Succory, Beet, Pimpernel, or Mercury, which last herb is proper to the *Linnet*. Such birds as are used to dust themselves, it would without doubt be convenient to put sand or dust in their Cages; for this basking themselves in the dust rids them of Lice and Vermine: Likewise, such as are used to wash themselves ought to have water set them for that purpose.

It would also be of advantage, indeed it were necessary, to put a little fine gravel in their Cages, that they may pick up and swallow some grit or small stones, to help them in grinding their meat in their stomachs, as wild birds are used to do, in whole Gizzards you will never fail to find small stones and grit.

Olinia advises in tumours or impostumes on the head, (which are most incident to birds of a hot complexion) to cauterize the place affected with a hot Iron, and then anoint it with black Soap dissolved, or Oyl and hot alichs. Some use to purge the birds, before they burn them, with juice of Beet.

For the *Aphthae* he prescribes lightly to touch the Palate with a feather dipt in honey of Roses, which hath been sharpened with a little Oyl of * *Sulphur*.

* Brimstone.

For the *Asthma*, or shortness of breath, he advises to drop two or three drops of *Oxymel* into their throats with a feather; mingling thereof also with their water for two or three days, or dissolve white Sugar-candy in their water.

Hoarseness and loss of voice he saith is remedied by giving them for their drink a decoction of Jujubes, dried Figs, and pounded, boil'd in common water, and that for two days, and the next two or three days juice of Beet: And if it be in Summer time setting them all night in the open air, so as the dew may not fall upon them.

For a scouring he commends water in which Iron is quenched, or a light decoction of Services, or Cornelian Cherries.

For coliciveness he advises to put a feather anointed with oyl into the Fundament once or twice a day for two days, giving them also the same days juice of Beet.

For the Gout: Washing the Legs and Feet twice a day for four or five days with a decoction of the root of white Hellebore in common water, as hot as the Bird can endure it; and for want thereof bathing it with Brandy Wine, or Aqua Vitæ.

To stir up and quicken birds to sing, give them somewhat that they are most greedy of, and most delighted in, or something that is heating. Some use to give them Linseed mingled with Pine-kernels pounded; putting in their drinking Cup two or three Chives of Saffron, encompassing their Cages with some pleasing verdure, as of

Birds fed with Pasture are wont to have their drinking Cup set without their Cages; Seed-birds within. Keep their Cages neat, and in the bottom put in Winter-time hay or straw broken, in Summer-time sand. So far *Olinia*. I suppose it would be convenient to give them a little gravel in their Cages all times of the year for the reason before intimated.

THE

THE FIRST MEMBER OR SUBSECTION, Of small Birds with slender Birds.

OF these there are many sorts. All besides Swallows may conveniently enough be divided into such as have the feathers of their Tails all of one colour, and such as have a particoloured Tail. We will first treat of *Larks* and *Swallows* by themselves, then we will reduce the rest to the now mentioned heads.

CHAP. I.

OF LARKS.

§. I.

Of Larks in general.

A Lark, called by the *Grecians* *Kopódax*, from the word *Kópus*, signifying a Helmet, by the *Latines* also *Callita* and *Galerita*, from *Callis*, and *Galea*, or *Galerus* of like signification (which names do yet properly agree to the crested Lark) is distinguished from other sorts of Birds. 1. By its long Heel or Claw of the back-toe; which is the characteristic mark of this bird: 2. By the testaceous or earthy colour of its feathers: Which note is not common to all the Birds we comprehend under this title, nor proper to this kind, for it agrees to *Sparrows*, and other Birds: 3. By its singing as it flies mounting up in the air. We have in *England* observed four sorts of Larks: 1. The most common one: 2. The Wood-Lark: 3. The lesser crested Lark: 4. The Tit-Lark.

§. II.

The common Skie-Lark. *Alauda vulgaris*.

IT is not much bigger than a *House-Sparrow*, yet longer bodied; of an ounce and half weight: from the tip of the Bill to the Claws or Tail-end, (for they are equally extended) six inches and a quarter. The ends of the great feathers in the Wings stretched out were ten inches and a quarter distant. The Bill, measuring from the tip to the angles of the Mouth, was three quarters of an inch long: The upper Mandible black or horn-coloured, the lower commonly whitish. The Tongue broad, cloven, hard: The Nostrils round. It sometimes ruffles up the feathers of its head, almost in fashion of a Crest. A cinereous Ring or Crown compasses the hind part of the Head from Eye to Eye, but more fordid, and less conspicuous than in the *Wood-Lark*. The Head is of a testaceous or reddish ash-colour, the middle parts of the feathers being black. The Back is of the same colour with the Head: The Chin whitish: The Throat yellow, with brown spots: The sides of a reddish yellow. Each Wing hath eighteen quill-feathers. Of these all betwixt the sixth and seventeenth have blunt, indented, white tips. The edges of the four or five outmost are white, of those next the body cinereous, of the rest reddish.

The Tail is three inches long, consisting of twelve feathers, of which the outmost on each side hath both its upper half, and also the exterior Vane of the lower white: The next to this hath only its outer Web white, the inner being black: The three following on each side are black. The two middlemost are sharp-pointed; of which that that lies undermost when the Tail is shut hath ash-coloured edges: That which covers it lying uppermost, towards the tip is cinereous, toward the bottom blackish. The Feet and Legs are dusky: The Claws black, with white tips. The outer toe grows to the middle below as in other small birds.

The Liver is divided into two Lobes, the left much less than the right, that there may be room for the Gizzard, which in this bird is fleshy, and great for the bigness of the bird. The flesh is very sweet and delicate. In mild Winters it feeds wondrous

D d 2

fat:

fat: And there are then taken an innumerable number with us in England for the furnishing and adorning of our Tables, as *Polydore Virgil* truly writes. It builds upon the ground, and lays four or five Eggs at once: A late Writer saith three or four, and that to his knowledge he never found five in all his life.

This Bird builds (saith *Olinia*) in plain, open ground, under some clod of Earth; others say in Corn, or thick high grass in Meadows: And though in Winter we see great flocks of them, yet we find the fewest of their Nests of any birds that are so plentiful. He makes his Nest of dried herbs and strings, and breeds thrice a year, in *May*, *July*, and *August*, rearing his young very suddenly: So that if you have a Nest, you must take them as soon as they are spoon-feathered, or else you run the risk of losing them, for they will get them gone of a sudden. This bird breeds much later than the *Wood-Lark*, by almost two months, for she seldom hath young ones before the middle of *May*.

Young Nestlings may be brought up almost with any meat, but if you give them sheep's Heart and Egg chopt together, till they are about three weeks old, it will not be amiss: And when they come to eat alone, give them Oatmeal, Hemp-feed and bread, mixed together with a little Egg. *Olinia* saith, to save charges, you may feed them with Wheat, Oats, and Millet. These birds that are so young may be brought up to any thing, one bird learning another birds Song. You must always observe to give them food at the bottom of the Cage, and let them have a new Turf every week placed in a dish of water in their Cage, (which must be as large as two of the *Wood-Larks* Cage.) They need have no Perches in their Cages.

The Cock may be known from the Hen, according to *Olinia*, by having his heel so long that it reaches beyond his knee; and having two black spots on his Neck, one on each side, somewhat in fashion of a Ring or Collar; his breast darker, and more speckled with black, and a grosser body. My English Author saith, that those you intend to keep for singing were best be taken in *October* or *November*, and then they will sing a little after *Christmas*; and advices to chuse the straightest, largest, and loftiest bird, and he that hath most white in his Tail, for these (saith he) are the usual marks for a Cock. If you find him very wild and buckish, tie his Wings for two or three weeks, till he is become both acquainted and tame also, and then when you perceive him pretty orderly, untie his Wings, still letting him hang in the same place he did. You must feed this old bird with Hemp-feed, Bread, and a few white Oats, for he takes great delight to husk the Oats: And when he begins to sing, once in a week you may give him a hard Egg, or shred him a little boyled Mutton, or Veal, or Sheep's heart. You must observe in this bird, as in all others, that you give it no salt meat, nor bread that is any thing falt.

§. III.

The Woodlark, called at Rome, Tottovilla.

THE Cock we made trial in weighed an ounce and a quarter: Its length from Bill to Tail was six inches and an half: The distance between the ends of the Wings spread twelve inches and an half.

It is lesser than the common *Lark*, and shorter bodied. Its Bill, as in the rest of this kind, straight, slender, sharp-pointed, above half an inch long, somewhat flat, of a dusky colour: Its Tongue broad, cloven: The *Irides* of its Eyes hazel-coloured: Its Nostrils round. Its Feet of a pale yellow, inclining to flesh colour: Its Claws dusky; that of the back-toe longest. The outmost fore-toe sticks to the middle below the divarication.

The Breast and Belly are of a pale whitish yellow; the Throat deeper coloured; both spotted with black in the middle parts of the feathers. The Head and Back are particoloured of black and reddish yellow, the middle of each feather being spotted with black. The Neck is ash-coloured. A white line encompasseth the Head from Eye to Eye like a Crown, or Wreath. The Rump is of a yellowish red or tawny.

Each Wing hath eighteen prime feathers; the outmost being much shorter than the rest. The next five are half an inch longer than the rest, having their points sharp, and their outer edges white: The rest have blunt points, indented as it were in the middle, having yellow edges. The feathers of the bastard wing are dusky with clay-coloured tips, and at its root is a white spot. The small feathers on the ridge of the Wing are ash-coloured. The Tail was two inches long, consisting of the usual number

number of feathers, viz. twelve, not forked; yet the middle feathers were somewhat shorter than the rest, and ended in sharp points, being between green and a fordid red or fulvous colour. The four next on each side had blunt points, were whitish at tips, the outmost most, the rest in order less, else blackish.

It hath no Claw: In the Stomach we found Beetles, Caterpillars, Gromil-feed, &c. The stomach was provided with strong and thick muscles. The blind Guts in this kind, as in all other small birds, that we have observed, are very short: The Gut below these appendants is larger.

These birds fly many together in company, singing as they fly with a note not much unlike a *Blackbird*.

It is distinguished from the common *Lark*, by the following marks especially: 1. Whistling like a *Blackbird*. 2. A Circle of white feathers encompassing the Head from Eye to Eye like a Crown or Wreath. 3. The first or outmost feather of the Wing being much shorter than the second, whereas in the common *Lark* it is near equal. 4. The outmost feathers of the Tail having white tips. 5. That it sits upon trees. 6. It is lesser than the common *Lark*, but hath a shorter, and thicker, or rounder body for its bigness.

Aldrovandus makes no mention of this bird that I know of. *Olinia* figures and describes it in his *Ocellaria* under the title of *Tottovilla*.

The *Woodlark* is comparable to the *Nightingale* for singing, and by some preferred before it. He will also emulate the *Nightingale*, and hath great variety of notes.

It is a very tender bird, and yet breeds the soonest of any in England. My Author saith, that he hath had a Nest of young birds ready to fly by the sixteenth of *March*: That it builds most commonly in lays, where the grass hath been pretty rank, and is grown ruflet, under some large Turf, to shelter its Nest from the wind and weather. He could never bring up a nest of young ones, because they either had the cramp, or fell into a scouring in less than a weeks time after he had taken them: Nor could he ever hear of any who had kept them so long as till they sung. So that they are never bred from the Nest.

The Seasons of taking Woodlarks, and which best to keep.

There are three seasons of taking *Woodlarks*; 1. The first is in *June*, *July*, and *August*, when the Branchers are taken, having not yet moulted. These birds sing presently, but continue their singing but little, for they soon fall a moulting. They are commonly very familiar birds as being taken young.

2. The next season for taking them is in the latter end of *September*, which my Author calls the general flight-time, when they rove from one Country to another. By this time they have all moulted their feathers, and you can hardly distinguish a young bird from an old. The birds taken at this season are brave, strong, and sprightly; and prove well at Spring if they be well kept all Winter; otherwise they will be lousie, and quite spoiled. They usually begin not to sing till after Spring, and continue till *July*.

3. The third season is from the beginning of *January* to the latter end of *February*, when they are paired, and have parted with their last years Brood. These sing within three or four days, or a week at furthest, (if they be well conditioned birds) and will soon become tame. For your fearful, wild, buckish birds seldom prove good: For upon every turn they bolt against the sides of the Cage, and bruise themselves, and so are apt to leave off singing. Therefore if you have a bird that is a good bird and wild, have a Net knit French Mesh, and put it in the inside of the Cage, sowing it close to the sides and strait, that when he bolts or flirts he may take no harm. Birds taken at this season for the most part prove the best, they being in full stomach, and singing in a very short time after, and being also more perfect in their song than those taken at other seasons.

How to order a Woodlark when taken.

In the first place you must have a Cage with two pans; one for mixt meat, and another for Oatmeal and whole Hemp-feed. First, boil an Egg hard: Then take the crum of a half-peny white-loaf, and as much Hemp-feed as the bread: Chop your Egg very small, and crumble your bread and it together: Then bruise your Hemp-feed very small with a rolling pin, or pound it in a Mortar, mingle all together and give

give it him. 2. You must put red gravel sifted fine at the bottom of his Cage; for he delights to bask himself in the sand, which if he doth not pretty often he proves lousie, and then seldom comesto any thing; If you leave gravel-stones in the sand, he will be apt to break his feathers in basking him. Shift this sand twice a week, otherwise he will be subject to clog his feet with his dung. 3. Be sure that his meat be not too stale, for he will never thrive upon it when dry or mouldy. 4. Have a great care to shift his water oft [thrice a week at least] for it stinks sooner than any birds water; because throwing about his meat some falls into it, which causes it immediately to stink. 5. Line your Peach in the Cage with some green bays, or else make a Peach of a Mat; which I have found them very much to delight in.

Note 1. If your bird be very wild when he is taken, keep him three or four days from company, till he begins to eat his meat. Strew some of the Hemp-feed and Oat-meal upon the sand, and some of his mixt meat also, because sometimes they find not the Pan till they be almost famished.

Note 2. If he be very poor, at the beginning of the Spring give him every two or three days a turf of three-leaved grass, and boil him a sheeps heart, and mince it small, and mingle it with his meat, and it will cause him to thrive exceedingly.

Note 3. If you would have your bird sing very lavish, feed him all the time of his song with some sheeps heart mixt with his Egg and bread and Hemp-feed; and put in his water two or three slices of Liquorice, and a little white Sugar-candy, with two or three blades of Saffron; do so once a week, and it will cause him to be long winded.

How to know a Cock from a Hen.

The surest way to know a Cock from a Hen is, 1. The largeness and length of his call. 2. The tall walking of the bird about the Cage. 3. At Evenings the doubling of his note, which we call *Cadling*, as if he were going to roost: But if you hear him sing strong you cannot be deceived, for Hen-birds will sing but little. The use of this is chiefly to know those birds that are taken at flight-time; because those taken at other seasons sing soon after they are taken, or not at all.

The Woodlarks Diseases, and their Cures.

Their diseases are, 1. The Cramp, caused by dung clogging and numbing their Feet, if their gravel be not often shifted; or by hanging them out abroad in the rain, for wetting the sand they sit upon. This is helped by lining their Peach, that they may delight to sit upon it, and giving them fresh sand, anointing them as the *Nightingale*.

2. Giddiness in the Head occasioned by feeding upon much Hemp-feed, is helped by giving them some Gentles or Maggots, or else Hog-lice, or Ants and their Eggs: And putting three or four slices of Liquorice in their water.

3. Louiness and Scurf: Cured by smoaking his feathers with Tobacco, and giving him fresh Gravel, and setting him in the Sun: For if he hath strength to bask in the sand he will immediately rid himself of the Vermin.

§. IV.

The Tit-Lark, *Alauda pratensis*, Aldrov.

IT seemed to us less by half than the common *Lark*, weighing scarce an ounce; having a long body, and a small head: A slender sharp Bill of half an inch long, the upper Mandible black, more flat and depressed toward the Head: The tip of the Tongue is jagged, the Circle about the Pupil hazel-coloured. The colour on the top of the Head, Shoulders, and middle of the Back various, of a yellowish green and black; the middle parts of the feathers being black, the outides or edges of a yellowish green. The lower part of the Back or Rump is only green without any mixture of black. The upper side is of the fore-mentioned various colour, the single colours being less conspicuous by reason of a small mixture of cinereous. As for the under side of the body, the Breast and sides under the Wings were of a fardid yellowish white, spotted with black, the lower belly and Throat under the Chin white, without any black spots.

The

The quill-feathers of the Wings were dusky, their exterior edges being of a yellowish green. The middle feathers of the first row of coverts have their tips and exterior edges white; and the middlemost of the second row theirs full of a lighter white. The rest of the covert-feathers of the Wings are almost of the same colour with the scapular feathers. I suppose it is peculiar to this kind to have the four first quill-feathers equal.

The Tail is made up of twelve feathers, the two outmost of which on each side, are particoloured of white and brown: In the outmost feather about the one half, and that the uppermost, is white, the white dividing the feather obliquely. Of the next feather the tip only is white: The rest of the feathers are of a dark brown, having their exterior edges of a yellowish green. Of the two middlemost the edges round about are of the same yellowish green, not so even and trim as those of the other feathers, but as it were jagged or fringed. The Tail, when folded up, is a little forked, near three inches long.

The Feet are yellow: The Claw of the back-toe, as in the rest of this kind very long and dusky. The Gizzard not so mucous as in other *Larks*, wherein we found Beetles and Insects liketo meal-worms. The blind Guts are something longer than in the common *Lark*. It hath also a Gall-bladder.

This bird sits also upon trees. In general it is less than the common *Lark*, greener, and not so finely coloured: In length from the point of the Bill to the end of the Claws or Tail (for they are equally extended) six inches: In breadth between the tips of the Wings spread out ten and a quarter.

Mr. Jelfop suspects that there is yet another different sort of this bird, which may be called the *lesser field-Lark*, which is 1. A little bigger than that here described; 2. Less green; 3. Having paler Feet; And 4. much shorter Spurs.

The *Titlark* Nest I once saw in a *Furze-bush* not far from the ground: It was built outwardly of Moss, inwardly of straw, with a little horse-hair. She lays five or six Eggs.

In this kind the Cock is all over more yellow than the Hen, but especially under the Throat, on the Breast, Legs, and soles of the Feet.

"The *Titlark* (saith a late English Writer) sings most like the *Canary bird* of any bird whatsoever; whisking, curring, and chewing: But his Song is short, and hath no variety in it: He comes with the *Nightingale* about the beginning of April, and goes about the beginning of September. The Young are to be fed, when first taken, after the same manner as the *Nightingale*: The old one (if taken) in like manner to be at first cram'd: When he will feed himself give him *Woodlark* meat, or almost any other. Before his going away he is apt to grow fat like the *Nightingale*, but will eat though never so fat. He is a hardy bird, and long-lived, if preserved with care, not subject to colds or cramps.

§. V.

The *Titlark* that sings like a Grasshopper, *Locustella*, D. Johnson.

IT is lesser than the *Regulus non cristatus*, hath a pretty long, straight Bill, yet having a little declivity above, the upper Chap black, the nether of a horn colour. The upper side of the body is of a dusky yellow, besprinkled with blackish spots; the under side of a pale yellow. The Tail is of the longest, of a brown or dusky colour, when spread ending in a circular circumference. On the lower Belly, the Thighs, and under the Tail it hath brown spots tending downwards. It hath long, slender dusky-coloured Legs, crooked Claws, and a very long Spur or heel. It feeds upon flies: It hath a note like a *Grasshopper*, but louder and shriller. When it sings it commonly sits upon a bush, with its mouth open, and straight up, and its Wings dis-they'd.

§. VI.

§. VI.

The Calandra, which perchance is no other than the Bunting.

THis bird *Olinia* describes in this manner. It is a kind of *Lark* something bigger than the common, otherwise for shape of body not much unlike it: In respect of bigness comparable to a *Thrush*. Its head is greater than a *Thrush*; its Bill shorter and thicker: Its Feet as in other *Larks*. The colour of its under or fore part is a light cinereous, with certain black spots on the Breast, after the manner of a *Thrush*. Of its upper or hind-part, viz. the Back, Wings, and Tail, &c. like that of * *Umber*. About two inches below the Bill a circle of black feathers encompasses the Neck, in fashion of a Collar or Necklace.

This bird seems to be the same with our *Bunting* hereafter to be described. The figure of the Bill in *Olinia's* Cut doth not agree to the *Bunting*, indeed answers not to his own description; it being drawn as slender and long as a *Thrush*, whereas he describes it thicker and shorter. *Bellonius* his description of the *Calandra* agrees well enough to the *Bunting*; although he also describes the *Bunting* elsewhere, under the title of *Cenchrasmus*. Howbeit, that we may leave the Reader to the liberty of his judgment concerning these matters, we shall subjoin *Bellonius* his description of *Calandra*. *Calandra* (saith he) is a sort of *Lark*; which who so desires to know, let him fancy a crested *Lark* approaching to the bigness of a *Starling*. Wherefore he that shall call it a great *Lark*, may well seem not unfitly to denominate it. For both its voice, though higher, is altogether like the voice of a *Lark*, and also the colour of its feathers the same, its Head the same, its Wings the same, its Tail the same, and likewise its conditions the same: Its Legs, Feet, and Toes altogether alike, and in these the Spur or back-claw long, as in *Larks*. The Neck slender where it is joyned to the Head, as we observed also in the *Peacock*, and which is likewise common to *Quails*. But because it differs not from a common *Lark* save in bigness, and the crested *Lark*, as we said, is bigger than the common, and hath a tuft on his Head, which both the common *Lark* and the *Calandra* want; I can easily allow this sort of bird to be called a *Lark*, and to be comprehended under the *Genus* of *Larks*. The *Calandra* exceeds the rest of this kind in bigness, and therefore stands in need of a thicker Bill, that it might break the harder sorts of grains upon which it feeds, though those that are kept shut up in Cages are wont to be fed with Oats and crumbs of white bread. Thus far *Bellonius*.

§. VII.

The crested Lark, called by the Germans, Kommanick, seen and described at Vienna in Austria. Alauda cristata, Galerita.

IT is bigger than the common *Lark*, hath a greater and longer Bill, almost an inch long, measuring from the point to the corner of the mouth: The upper Chap dusky, the lower whitish. The Tongue is broad, somewhat cloven; the *Irides* of the Eyes of a cinereous hazel colour. The Crest upon the crown of the Head consists of seven or eight feathers [I counted ten or twelve.] These feathers are situate * transversely, and may be erected or lowered, spread or contracted at pleasure, like the Tail. These feathers are blacker than the rest, and almost half an inch long. The Back is more cinereous, and less spotted than in the common *Lark*: The Rump almost wholly destitute of spots.

The prime feathers of the Wings are in number eighteen, besides the outmost very short and small one. The outer Vane of the first Pinion feather is of a dirty white, inclining to red or yellow: The rest are not so black as in the common *Lark*, and have some mixture of a pale red, even in their lower part. The Breast and Belly are white, with a dash of yellow: The Throat spotted, as in the common *Lark*: The Tail is 2½ inches long, composed of twelve feathers; the two outmost whereof on each side have their exterior borders white, with a dash of red, being else black; the third and fourth are wholly black; the fifth and sixth of the same colour with the body. The Gall from green inclines to a dark blue. [I suppose this is accidental, and that the colour of the Gall varies in divers birds.] The blind Guts are very short.

This

This differs from the common *Lark*, 1. In bigness: 2. In the Crest: 3. In the colour of the Back, which is less spotted, and not so beautiful: 4. In the measure of the Tail, which in this Bird is shorter: 5. In that it soars not so much in the air, and when it mounts up stays not so long there: 6. That it flies not in flocks, as they do. Lastly, (as *Aldrovandus* observes) it is frequently seen about the banks of Lakes and Rivers.

Dioscorides prescribes this bird to be eaten roasted, *Galen* in some places of his works roasted, in some places boiled, to assuage Colic pains. *Marcellus Virgilius* prescribes the powder of it, put in an earthen pot, and dried or burnt in an Oven, taken in water to the quantity of two or three spoonfuls, before all other medicines for the Colic.

§. VIII.

The lesser crested Lark.

THis (as * *Aldrovandus* describes it) is like the greater crested *Lark*, but much less, and hath a considerable long tuft on its Head for the smallness of its body: Red Feet. The colour of its whole body seems to incline more to brown than that of the greater kind. I have observed them running in flocks abroad in the fields.

This Bird Mr. *Johnson* of *Brigul* hath observed in the North of *England*.

§. IX.

*The Giarola of * Aldrovandus, having a long heel.*

IT was of the bigness of a *Lark*. Its length from the tip of its Bill to the points of its Claws was two Palms: Its Bill brittle, red, withinside and about the corners of the Mouth yellow: It gapes wide. The colour of its Crown, Neck, Back, and Wings is various; so that therein it exactly resembles a *Quail*, and is also very like to a *Woodcock*. For all the feathers are of a dusky Chestnut-colour, only their edges are encompassed with a more dilute or whitish, or moderately reddish colour. The bottom of the Head, or beginning of the Neck is encircled with a border of whitish feathers, as it were a Wreath or Crown. The Tongue is cloven, the Belly white, the roots of the feathers cinereous. The Tail so short that scarce any thing of it appears, yet is it forked and particoloured; for the last or outmost feather on each side is all over white, the last save one partly white, partly chestnut. The whole Tail is scarce an inch long, and narrow, being made up of very narrow feathers. Its Legs and Feet are sufficiently large, and of a flesh colour or reddish white. In the Feet this is worthy the observation, that the back-toe is very long, and hath a Claw of equal length, so that both together make up an inch. This Claw is not, as in other birds for the most part, crooked from its rife, but first straight for a good way, and toward the tip moderately hooked. The Claws also are whitish.

§. X.

*The Bird called Spipoletta at Florence, Tordino at Venice: Perchance the * Stopparola, or † Grifola, or Spipola secunda of Aldrovand.*

IT is less than a *Lark*, about the bigness of a *Beccafico*: From Bill point to Tail end 7½ inches long: Between the tips of the Wings extended eleven three quarters broad. Its Bill is small, slender, about half an inch long, straight, sharp; and cole-black: Its Spur or back-claw very long, like a *Lark*.

Its colour on the top of the Head, Neck, Shoulders, and Back cinereous, with a dash of green. [Mr. *Willughby* makes the Back to be of an obscure or dusky yellow, the Head more cinereous.] The Breast and Belly are white: The Throat spotted. The Belly of the Hen-bird is yellowish. [The Throat, Breast, and Belly in some are white, in others of a lovely yellow: But in all generally the Breast is darker than the Throat or Belly, and spotted.] It hath in each Wing eighteen prime feathers, (I found not in this kind that small, short, outmost feather, which we have observed in the Wings of many small birds,) of a dark or dusky colour; excepting the outer

E c edges,

* A certain earth which Painters use of a dusky colour.

* Across the head.

* Ornithol. Book 17. chap. 39.

* Tem. 1. p. 732. † Pl. 738, 731.

edges, which are either whitish, or yellowish. The feathers also of the second row are of the same colour with those of the first. The Tail is about three inches long, and consists of ten feathers, of which the two outmost on each side have their outward Vanes and tops, in the whole, above their halves milk-white; all the rest are dark-coloured, and almost black, especially in the Males, excepting the two middlemost, which round the edges are either yellowish or white. [Mr. Willughby describes the Tail a little otherwise, and perchance more exactly, thus: The Tail is black, but the upper half of the outmost feather on each side, and the tip of the next are white; the two middlemost from dusky incline to an ash-colour.]

This bird is sufficiently distinguished by the length of its heel from other sorts of birds, by the black colour of its Wings and Tail, Bill and Feet from other *Larks*.

Concerning its manners, place, nest, breeding, &c. we have nothing further to add. We saw it at *Venice* and *Florence* in the hands of Country-men and Fowlers among other small birds to be sold in the Markets. At *Florence* they called it *Spipolletta*; whence, induced by the agreement of names, we guess it to be either the first or second *Spipola* of *Aldrovandus*. But yet seeing in the descriptions of these birds there is no mention made of the length of the heel, (which it is not likely so curious a spectator as *Aldrovandus* should either overlook, or through neglect and forgetfulness omit) notwithstanding the convenience of names these may perchance be distinct Species. And therefore that we may not give the Reader just occasion to complain, that we have rashly omitted any thing in our *Ornithology*, we will annex to this Chapter *Aldrovandus* his descriptions of *Spipola*, *Stopparola*, and other small birds, to which we judge this to be the same, or very like.

* *Ornithol.*
lib. 17, cap. 25.

The first *Spipola* of * *Aldrovandus*:

The first *Spipola*, which is greater than the rest in this kind, hath an ash-coloured Head: Under the Bill a white spot in place of a beard. Its Breast is red: Its Belly particoloured of red and white: Its Tail black above, white underneath: Its Back ash-coloured. Its Wings particoloured of white, black and red: its Legs and Feet yellow; its Claws black: Its Bill long, slender, and dusky coloured. This bird, if it be exactly described, is to us as yet unknown.

* *ibid.*

The other *Spipola* of * *Aldrovandus*.

This inclines more to an ash-colour than the precedent: But differs from it in that it hath not a red Breast, but marked with black spots drawn downwards. It is also more cinereous above than beneath: Moreover, the Belly is almost white. Behind the Eyes is a great spot approaching after a sort to a ferrugineous colour. The lesser feathers of the Wings, and those which cover them, are black, their sides and ends being cinereous. The Legs and Feet are dusky: The Tail ash-coloured.

The third *Spipola* of *Aldrovandus*, described in the same Chapter.

This some call *Boarina*. It is a small bird, almost all over of a pale or whitish yellow, but deeper in the Wings than elsewhere. The Bill and Feet are dusky.

The *Stopparola* of *Aldrovandus*, lib. 17. cap. 27.
The White Throat.

The Fowlers (saith he) of our City call this bird *Stopparola*, a name I know not what it signifies, nor whence it is derived, unless perchance it be from Stubble, which our * Country men call *Stoppia*. It is, if I be not mistaken, of the *Genus* of the † *Muscicape*, hath the Breast and Belly for the most part white; the Head (which on the Crown is speckled with white spots) Neck, Back, and Tail brown; the quill-feathers of the Wings black, as are also the coverts, but yellowish on the sides: The Legs and Feet slender, and black: The Bill indifferently long, sharp-pointed, and black.

* *Rafinici*, that is, Peasants,
† Fly-catchers

A Bird like to *Stopparola* & *Magnanina*, *Aldrov.* in the same place.

It is of the bigness of a *Wagtail*; hath a long, straight, sharp Bill, yet above having a little declivity; black above, and of a horn colour underneath: The Neck, Breast, and Belly pale: The Eyes small and lively, having a black Pupil; and

and a white circle, and a dusky spot hardly conspicuous about them; The Feet leaden-coloured.

The *Grifola* of * *Aldrovandus*.

The Sparrow.

* *Book 17,*
chap. 28.

There is a certain other small bird caught in our fields, which the Fowlers call *Grifola*, perchance from its grey or hoary colour, although it be not grey, but of a dusky ash-colour: Or perchance because it cries much, keeping alone; for we sometimes use the word *gridare*, to signify lamenting. It feeds upon flies, and other such like Insects, as I gather from the figure and construction of its Bill; for it is slender, straight, and long. On the Neck and Breast it is distinguished with oblong, brown spots, tending downwards. The whole Belly is white. The Head, upper side of the Neck, Back, and Tail are dusky, as are also the Wings, the feathers whereof have their sides and ends of a pale ash-colour. The Legs and Feet are also dusky or blackish.

The *Glareana* or *Grien Vogel* of *Gesner*.

Hither also for its spotted Breast we will refer the *Glareana* or *Grien Vogel* of *Gesner*: which because the Author described from the inspection of a Picture sent him from *Siraburgh*, we suspect not to differ from the above described, although in some particulars it seems to vary. We refer the Reader, that desires more concerning it, to *Gesner* or *Aldrovandus*.

CHAP. II.

Of the *Swallow* in general.

THE characteristic notes of *Swallows* are a great Head, a short Neck, a small, short Bill, a wide mouth, for the more easy catching of Flies, and other Insects, as they fly to and fro: Very long Wings; a swift and almost continual flight; a long and forked Tail for the more ready and speedy turning their body, and directing their flight: White Eggs, speckled with ferrugineous spots, as *Aldrovandus* truly observed. This bird is the Springs Herald, being not seen throughout all Europe in Winter-time: Whence that Greek Proverb, common to almost all Languages, *Μία χελιδὼν ἔαρ ἔποιε*; *One Swallow makes not a Spring*.

We have observed four sorts of *Swallows* in England, and not more elsewhere. Those are, 1. The common or House-Swallow: 2. The Martin, or Martinet, or Martlet: 3. The Sand-Martin or Shore-bird: 4. The black Martin or Swift. Of this last we have seen one of this kind as big as a Buzzard: No way differing in shape from the common one, save in the Legs and Talons, and hookedness of the Beak, all fitted for prey.

As for the Physical virtues and faculties of *Swallows* and their parts, *Schroder* hath thus briefly summed them up.

1. *Swallows entire* are a specific remedy for the Falling sickness, dimness of sight, clear eyes, (their ashes mingled with honey and so applied) they cure also the Squinancy, and inflammation of the * *Uvula*, (being eaten, or their ashes taken inwardly.)

* Pin of the Mouth.

2. A *Swallow's heart* is also said to be good for the Falling sickness, and to strengthen the memory. Some eat it against the Quartan Ague.

3. Some will have the blood to be a specific for the Eyes: And they prefer that which is drawn from under the left Wing.

4. There is a Stone found sometimes (though seldom) in the stomach of some of the young *Swallows*, called *Chelidonius*, of the bigness of a Lentile or Pease. This they will have to help the Falling sickness in Children (bound to the arm, or hung about the neck.)

Note. They report this stone to be found especially in the increase of the Moon, and in the first hatch'd young one. Others take it out in August about the Full of the Moon.

5. The *Nest*, outwardly applied gives relief in the Squinancy: Heals the redness of the Eyes, and is good for the biting of an Adder, or Viper.

6. The *Dung* heats very much, dissolves, and is acrimonious. Its chief use is against the bitings of a mad dog, taken outwardly and inwardly; in Colic and Nephritic pains taken inwardly, put up it provokes excretion. *Schrod.*

An approved Medicine for the Falling sickness.

Take one hundred Swallows, [I suppose here is some mistake, and that one quarter of this number may suffice] one ounce of *Castoreum*, one ounce of *Peony roots*, so much *White-Wine* as shall suffice. Distill all together, and give the Patient to drink three drachms fasting every Morning. This will lessen every fit, and perfectly cure them. Purge often, as the strength of the Patient will bear, with *Sibium*.

CHAP. III.

Of Swallows in particular.

§. I.

The common or House-Swallow. Hirundo domestica.

The Female weighed scarce an ounce: From the Bill to the end of the Tail being seven inches long, and measuring from tip to tip of the Wings extended, twelve and an half broad. Its Bill was short, black, flat, and depressed, very broad at the Head, but sharp-pointed; black also on the inside: But the Tongue and roof of the mouth yellow. The aperture of the mouth gaping very wide, for the convenience of catching Flies and Gnats as the flies. The Tongue short, broad, and cloven: The Eyes great, and furnished with nictating membranes: The Irides hazel-coloured. The Feet short and black; the outmost toe growing to the middlemost at bottom.

The Head, Neck, Back, and Rump are of a very lovely shining, but dark purplish blue colour. As well above as underneath the Bill, that is to say, in the Forehead and under the chin, is a deep sanguine spot: But that underneath is much the bigger. The Throat is of the same colour with the Neck. The Breast and belly white, with a dash of red; as are also the interior covert-feathers of the Wings. The Tail is forked consisting of twelve feathers; the outmost of which are an inch longer than the next, and end in sharp points: Of the rest the interior are also shorter in order than the exterior, but the difference much less. All these feathers of the Tail, except the two middlemost, are black, and each adorned with a white spot: Which spots cross the Tail in a straight line. [The two middlemost want the white spot.] The Wings have eighteen quill-feathers, alike black: But all the covert feathers are of a deep shining blue.

In the Stomach of an old bird we found Beetles; in the stomachs of the young many small, pellucid, unequal stones, tintured with a fair Claret colour; not far from the Eggs small worms spirally rolled up, of three inches length. These birds build in Chimneys. About the end of *September* we saw great numbers of them to be sold in the Market at *Valentia* in *Spain*, when we travelled through that Country, *Anno 1664*.

What becomes of Swallows in Winter time, whether they fly into other Countries, or lie torpid in hollow trees, and the like places, neither are natural Historians agreed, nor indeed can we certainly determine. To us it seems more probable that they fly away into hot Countries, viz. *Egypt*, *Aithiopia*, &c. then that either they lurk in hollow trees, or holes of Rocks and ancient buildings, or lie in water under the Ice in Northern Countries, as *Olaus Magnus* reports. For as *Herodotus* witnesseth, they abide all the year in *Egypt*, understand it of those that are bred there (saith *Aldrovandus*) for those that are bred with us only fly thither to winter. I am assured of my own knowledge (saith *Peter Martyr*) that Swallows, Kites, and other Fowl fly over Sea out of *Europe* to *Alexandria* to winter.

Swallows

Swallows sometimes vary in colour, as do also many other birds; I have (saith *Aldrovandus*) often seen *House Swallows*, all over white. If any one desires to have white Swallows, let him anoint their Eggs while they fit, with oyl-olive, *Aldrov.*

§. II.

The Martin, or Martinet, or Mantlet. Hirundo agrestis five rustica Plinii.

This being measured from the tip of the Bill to the end of the Tail was six inches long: The Wings being spread ten inches and an half broad. Its Head flat; Its Bill also very much depressed and flat, as in the *House-Swallow*; at its insertion into the Head; of an inch broad, but sharp at the point: From the tip to the angles of the Mouth but half an inch long; the upper Chap somewhat longer than the nether. The Mouth is yellow within: The Tongue cloven. The Circles encompassing the Pupils of the Eyes of a haxel-colour. The Feet small, and Legs short. The soles of the feet bare; in which appear the bottoms of the exterior Toes joined by a membrane. The Claws are white: The Feet to the very Claws covered with a white Down: By which note it is easily distinguishable from all its fellows of the *Swallow-kind*.

Its Head, Neck, Back, Tail and Wings are of the same colour with the *House-Swallow*, but sadder, and not so glossy: Its Rump, Breast, and Belly milk-white. Under the Chin the white is somewhat more fullen or obscure. Each Wing hath eighteen master-feathers: From the tenth the six or seven following have their tips broad and indented. The tips of the * interior quill-feathers are white. The Tail is less forked than in the *House-Swallow*. The feathers from the middle on each side are longer in order, the exterior than the interior, almost by an equal excess; otherwise than in the *House-Swallow*, the outmost feathers of whole Tail (as we said before) exceed the next three times as much as they do the following, &c. The length of the outmost feathers is two inches and an half, of the middlemost one and three quarters.

In the stomachs of the Young of this kind we found no stones, but many Flies and Beetles. This bird builds a round Nest like the *House-Swallow*, and also of like matter, yet not in Chimneys, but in Windows, under Eaves of Houses, &c. It differs moreover, in that the *House-Swallow* Nest is like those of other birds, semicircular, and all open above; but its Nest is covered above, a round hole only being left open in the side, by which the old one goes in and out.

§. III.

The Sand-Martin, or Shore-bird. Hirundo riparia, Aldrov.

This bird is the least that we know of the *Swallow-kind*; being from the tip of the Bill to the end of the Tail no more than five inches and a quarter long. Its Bill is small, sharp, flat, black, as in the rest of this kind, from the point to the angles of the Mouth half an inch long: Its Tongue cloven: Its Eyes great; its Feet dusky. At the root of the back-toe a few small feathers grow; else the Legs are bare as far as the knees.

Its Head, Neck, and Back are of a dark dun, or Mouse colour: Its Chin, Breast, and Belly white. At the bottom of the Throat a Ring of the same Mouse-dun encompasses the Neck. The number of feathers in Wings and Tail is the same as in other Swallows. But the quill-feathers of the Wings are blacker than the feathers on the back; from the tenth to the last all of equal length; the six next to the tenth have their tips indented. The middle feathers of the Tail are an inch and three quarters long, the outmost an inch and half.

It builds in the holes of River-banks, lays five or six Eggs, makes its Nest of straws, bents, &c. within of feathers, on which it lays its Eggs.

It differs from the *Common Martin* in having no white upon the Rump, nor its feet feathered, as that hath.

Of this kind great numbers are brought to the Markets at *Valentia* in *Spain* to be sold for the use of the Kitchen; where the Fowlers and Country people call them * *Papillon* di *Montagna*. They are frequent also in *Holland*, and no less in *England*.

* That is Mountain Butterflies.

§. IV.

§. IV.

The black Martin or Swift. Hirundo apus.

THis is the biggest of all *Swallows* we have hitherto seen. It hath a great Head, a huge wide mouth; but a very small, black Bill, (wherein it agrees with the * *Churn-Owl*) towards the Nostrils broad and depressed. Its Tongue is broad, and somewhat cloven: Its Nostrils long, placed obliquely, obtuse toward the Head, acute toward the point of the Bill: Its Eyes great, and their *Irides* of a hazel colour.

It hath almost no variety or difference of colour in the whole body: For as well the upper as the lower side, and also the Wings and Tail are black, with an obscure tincture of green, or red: Only under the Chin is a notable spot of white or ashy colour.

It hath in each Wing eighteen quill-feathers, all ending in sharp points, but especially the exterior ones. The Tail is about an hand-breadth long, consisting of but ten feathers, from the middle to the outmost in order one longer than another, ending all in sharp points.

Its Legs are very short, but thick: Its Feet very small. All its Toes stand forwards; for the least, which in others is wont to stand backward, is in this placed the same way with the rest. The least Toe hath, as in other birds, one bone: The other three, contrary to the manner of all other that we know besides it, have all an equal number of bones or joints, viz. only two, the one very short, the other longer. The Toes also are all divided from the very rife.

The Gall-bladder is little. The Stomach not very fleshy, out of which dissected we took Beetles and other Insects.

They say, that by reason of the length of its Wings, and shortness of its Legs, if it happens to alight or fall upon the ground, it cannot raise it self up again, but may easily be caught. Wherefore it doth either always fly, or sit upon the tops of Churches, Towers, or other ancient buildings.

Its weight was three quarters of an ounce: Its length from the tip of the Bill to the Claws five inches, to the end of the Tail seven and a quarter. The distance between the tips of the wings extended sixteen inches and an half.

Of this kind we have seen the Picture of one having its whole nether part, Throat, Breast, and Belly, white: And, as we said before, *Sealiger* mentions one of the bigness of a *Buzzard*.

§. V.

Aldrovandus his Sea-Swallow.

THis bird, in my judgment belongs not to this Family, but ought to be ranked with the lesser Lari or Sea-Gulls.

It is (saith *Aldrovandus*) much bigger than a *Swallow*, and hath longer legs. Its whole Belly up to the Breast is white; its Head, Wings, and Back dusky. Its Wings and Tail, as in *Swallows*, are very long, and of a blackish colour, but brown within-side. Its Tail is forked. Its Bill strong, and black, as in a *Gull*. Its * Mouth wide, and of a scarlet colour within. From the Bill through the Eyes, almost to the Breast, is extended a notable black line, which near the Breast makes as it were a Collar. The Feet are as black as Jet, and (as I said before) less than a *Swallow*. For its likeness it is called by *Fowlers*, The *Sea Swallow*.

§. VI.

** The American Swallow, called by the Brasilians, Tapera, by the Portuguese, Andorinha. Marggrav.*

IT is like our Country *Swallows*, of the same bigness, and flying about after the same manner. It hath a short, broad, black Bill: A wide Mouth, which it can open beyond the region of the Eyes, like the greater *Ibijan*; elegant, black Eyes: Long Wings, reaching as far as the end of the Tail; which is of a good breadth. Its Legs and Feet like those of our Country *Swallows*. All the upper part of the Head,

Head, the Neck, Back, Wings, and Tail feathers are of a brown colour mingled with grey. The Belly is white, as are also the feathers under the Tail: The Legs and Feet dusky.

This bird perchance may not differ specifically from our *European black Martin* or *Swift*: For that, as we before observed, the *European Swift* varies sometimes in colour, being found with a white belly.

§. VII.

** The Chinese Swallow of Bontius, whose Nest is edible.*

IN the Sea-coast (saith he) of the Kingdom of *China*, a sort of small particoloured birds, of the shape of *Swallows*, at a certain season of the year, viz. their breeding time, come out of the midland Country to the Rocks; and from the foam or froth of the Sea-water dashing and breaking against the bottom of the Rocks gather a certain clammy, glutinous matter, perchance the Sperme of *Whales*, or other filthes, of which they build their Nests, wherein they lay their Eggs, and hatch their Young. These Nests the *Chinese* pluck from the Rocks, and bring them in great numbers into the *East Indies* to sell; which are esteemed by gluttons great delicacies, who dissolving them in Chicken or Mutton broth, are very fond of them, preferring them far before Oysters, Mushrooms, or other dainty and licentious morsels which most gratify the Palate.

We have seen of this sort of Nests in the Cabinets of *Athanasius Kircher* the Jesuite, and other *Virtuosi*. They are (as * *Olaus Wormius* reports) of a Hemispherical figure, of the bigness of a Goose-Egg, of a substance resembling lling-plaſt. Concerning their faculties or vertues (saith *John de Laet* in his Epistle to *Wormius*) reports vary, some attributing to them something Venerical, others not. But he writes, that he had been informed by those who commanded in chief in the *East Indies*, that the birds that build them were found upon that part of the Sea-coast that is commonly called *Coremandel*, and chiefly about *Patane*.

CHAP. IV.

Slender-bill'd birds that have their Tails all of one colour.

The Hedge-Sparrow, Curruca Eliote, An Magnanina Aldrov?

THis is almost as big as a *Titlark*, or *Robin-red-breast*. Its Bill is slender, * pret- * From the tip of the cor-
ty long, and black; the Tongue cloven, horny, and black at the tip: The Nostrils of the figure of a Kidney-bean: The *Irides* of the Eyes hazel-coloured: The Ears great and wide.

The upper side of the body is particoloured of black and dirty-red, the middle parts of each feather about the shaft being black, the outides or edges red. These colours are so dull and fullen, that the bird notwithstanding, look'd on at a distance, appears but of a brown or dirty colour. The Head and Back shew something of cinereous, the middle spots being darker. The Rump is greenish, and void of spots. The prime feathers of the Wings dusky, with reddish edges. The interior of the second row of Wing-feathers have whitish tips: The lesser covert-feathers of the Wings are of the same colour with those on the body. This hath that extreme short feather in each Wing, which some birds want. The Tail is about two inches long, made up of twelve feathers, all dusky, without any variety of colours. The nether part of the body is cinereous, yet the lower belly whitish, but in some birds darker, and of a lead-colour. The Legs and Feet are of a yellowish flesh-colour; the Claws dusky; the hind-claw greater and longer than any of the rest. The outmost Toe, as in other small birds, at bottom grows to the middlemost.

The Cock had large Testicles: The blind Guts seemed to us in this to be more round and tumid than in other small birds. The Stomach was not very fleshy. It builds in hedges, and lays commonly five Eggs; is a foolish bird, and easily taken. Its Eggs are of a fine pale blue or Sea-green colour.

A late English Writer saith, that they are a very pleasant Song-bird, singing early in the Spring, and having great variety of notes : Old or young become tame very swiftly, and will sing in a short space after they are taken, if you take them in the latter end of *January*, or beginning of *February*.

Its weight was three quarters of an Ounce : Its measures were from the Bill to the Claws six inches ; to the Tail end seven ; from Tip to tip of the Wings spread eight and an half. Perchance this may be the Bird which *Gesner* makes his first *Curruca*, whose figure you have in *Aldrovandus Ornithology, lib. 17. cap. 34.*

In the Nest of this bird the *Cuckoo* is said to lay her Egg, which the foolish bird sits upon, hatches, and brings up the young one till it be fledg'd, and can shift for it self : Whence the word *Curruca* signifies as much in *Latine* as *Cuckold* with us in *English*, i. e. one that brings up another man's Child for his own. I suppose our word *Cuckold* came from *Cuckoo*, but a man abused in that manner is very improperly so called, he that abuses him being indeed the *Cuckoo*, that lays an Egg in his Nest. Whether or no this Bird doth hatch and bring up the young *Cuckoo* I cannot say of my own experience, but I am sure this is not the only *Cuckoo*'s-nurse, for I have known the *Water-wagtail*, and other birds perform that office.

The Magnan-
na of Aldrov.

Aldrovandus describes his *Magnanina* in these words. It is a bird of the bigness of a Sparrow, having a slender, sharp, black Bill : On the nether side down to the Belly of a pale ash-colour, the belly being white. Behind the Eyes it hath a notable spot of almost a Chestnut colour, of which colour is also the crown of the head. The greater Wing-feathers are black ; the Tail of a spadiceous, but paler than the Back. The Legs and Feet yellow, the Claws black. Some of our Fowlers call it *Magnanina*, as much to say, as a Smith or Carpenter-bird, perchance because it makes a loud knocking or snapping with its Bill as it catches flies : Other call it, *Passere matto*, that is a foolish Sparrow, perhaps from its colour, which approaches to spadiceous, or rather because it easily yields itself to be taken.

CHAP. V.

The Beccafigo or Fig-eater, perchance the fourth, or seventh Ficedula of Aldrovandus, to which are subjoyned the descriptions of other small Birds akin to this out of Aldrovand.

THIS is a very small bird, scarce so big as the common *Linnet*, short bodied. The colour of its Head, Neck, Back, Wings, and Tail from ash-colour inclines to green, in some dusky, with a Tincture of green. It hath the same number of Wing and Tail-feathers with all other small birds. But the quills of the Wing are of a Moule-dun, with black shafts, and green edges. The lesser rows of feathers that cover the under side of the Wings are yellow. The Tail is about two inches long, not forked, and all its feathers of a dusky colour.

The Belly of a white or silver colour : The Breast something darker, with a tincture of yellow.

The Bill is short, the upper Mandible black, the lower bluish : The Mouth within side of a red or flesh-colour : The Legs short, the Feet bluish, and in some of a lead colour.

This bird is not remarkable for any variety of colours, so that it is very hard for to describe it, as by certain and characteristic notes to distinguish it from all others.

In its stomach dissected we found grape-stones, and other seeds.

Mr. *Jessop* thot this bird in *Yorkshire*, and sent it us by the name of *Pettychaps*.

The seventh Ficedula of Aldrovand, which he saith his Country-men the *Bolognese* call *Scatarello*, but the *Genoise* Beccafigo, is almost all over of a dusky ash-colour, especially on the back and upper-side, for the Breast is yellow : The Feet are black. Saving in the colour of the Feet it agrees with the Bird by us described in this Chapter.

The seventh
Ficedula or
Scatarello of
Aldrov.

The second
Muscicapa of
Aldrov. or Bo-
rini of the
Genoise.

Neither is the second *Muscicapa* of Aldrovand, or *Chinin* of the *Bolognese*, called by the *Genoise*, *Borin*, much unlike to this. It is a little bigger than a Wren ; its Bill slender, sharp, and very fit to strike flies. The upper part of its Head, as also its Neck and Back are of a pale ash-colour : its Head beneath, its Throat, Breast, and Belly are of a white, tending to yellow ; but the Breast and Belly more dilute. The

Wings

Wings above dun, underneath also of the same colour, but paler. The Rump white. The Tail (which consists of twelve feathers) is three inches long, and of the same colour with the Wings. The Legs and Feet * *Spadiceous* : The Claws long and slender.

* Of the colour of the
Palm tree
branch.

The *Salicaria*
or Willow-
bird of *Gesner*.

Moreover, the *Salicaria* of *Gesner* is either the same with this, or certainly near akin to it. It is, saith he, a very small bird, of colour partly dusky, as on the upper side ; partly yellowish, as on the nether ; and partly whitish, as on the sides, and near the Neck, having reddish Legs. It feeds upon Flies, Spiders, and other Insects that it finds among Willows, which that it may enjoy alone, it drives away other small Birds. It hath a slender, straight Bill.

Aldrovandus describes another bird by the name of his first *Muscicapa*, or Fly-catcher, which he saith from following and frequenting Kine, the *Bolognese* call *Boarola*, or *Boarina*. It is a long-bodied bird, and hath a pretty long Bill, of a dusky reddish colour. The Head and whole Back are of a colour mixt of * plumbeous, cinereous, and yellowish. The Breast and all the belly white ; but the Breast spotted with black. The Wings are particoloured, of black, yellowish, and white : The Tail long, black, and white on the sides : The Legs and Feet black.

The *Bassina*
of Aldrov.

* A lead-co-
lour.

CHAP. VI.

A small bird without name like to the *Stopparola* of Aldrovand, perchance the *Moucherolle* of *Bellonius*.

FOR bigness and colour it is very like to a *Hen-Sparrow*, but of a longer and slender body. The Head, Neck, Back, and generally the whole upper side is of a dark cinereous or Moule-dun : Yet the Wings and Tail darker than the middle of the Back : And on the top of the Head, to one who heedfully views it, appear certain black spots. All the nether side is white : But the shafts of the feathers in the Breast are black, and the Throat and Sides somewhat red. The Tail is two inches and a quarter long, all dusky, as are also the greater quill-feathers of the Wings, for the edges of the interior are of a yellowish white. The outmost feather of the Wing is very short and little. [In some birds of this kind the tips of the interior feathers of the second row, as also of the bastard-wing feathers are of a yellowish white.]

The Bill is straight, black, broad, and depressed, or flat near the Head : The upper Chap rises up in an angle or ridge all along the middle, (whence the Bill seems to be triangular) and is a little longer than the nether, and sharp-pointed. The mouth gapes wide ; and is yellow within side. The Tongue cloven with a deep incision, rough on the sides. The Legs short and black : The Feet also small and short. The outer toe below sticks fast to the middle one, as in the rest of this kind.

The Gall is yellow : The Testicles small and black. In the Gizzard we found Bees, Flies, and other Insects. In summer-time it frequents gardens with us in *England*. In the young birds of this kind the Back is spotted with black and white.

This bird differs from the *White-throat*, in that its Tail is all of one colour ; from the *Beccafigo* in the colour of its body, being of a dusky cinereous or Moule-dun, whereas that is paler coloured, and tintured with green ; from both, in magnitude and in the figure of its Bill, which (as we said before) is broad, depressed, and triangular.

We have before in the Chapter of *Larks* presented the Reader with the descriptions of the *Stopparola* and *Stopparola similis* of Aldrovand. As for the *Moucherolle*, *Bellonius* describes it thus :

It is of the bigness of the * *Curruca*, lives in woods, and feeds chiefly upon flies, * Hedge-
whence also it is called * *Moncherolle* (*Monche* in *French* signifying a fly.) It is so like a Sparrow.
Sparrow, that unless by its conditions while it is living, and its Bill when dead, it can hardly be distinguished from it. It hath strong legs and feet : The feet also black. The Bill is slender and oblong, like a *Robin-red-breast* : The Tail also long. In brief it is in all points like to the small *Field-Sparrow* that haunts Oaks, excepting the Bill ; and its pleasant note. It lies much in Woods and Thickets, flying and hiding itself there. This description of *Bellonius* seems rather to agree to our *Hedge-Sparrow* than to the bird described in this Chapter.

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* The

* *The Brazilian Tijeguacu* of Marrgrave.

For the figure of its Bill alike depressed and triangular we have subjoyned this bird to the precedent, though otherwise not much resembling it. It is (saith *Marrgrave*) of the bigness of a *Sparrow*, or a little bigger; hath a short, triangular, and somewhat broad, black Bill: Its Eyes of a Sapphire colour; its Legs and Feet of a waxen, with dusky Claws. Its Toes are disposed after the ordinary manner. The whole bird is as black as a *Raven*: But on the top of the Head it hath a shining sanguine spot of the figure of a buckler. The feathers covering the whole back almost, and part of each Wing above, from black incline to blue. The Tail is short and black.

CHAP. VII.

The Redstart, Ruticilla, Φοινίκεος.

THe Breast, Rump, and sides under the Wings are red: The lower Belly white: The Head, Neck, and Back of a lead-colour. The forehead marked with a white spot, separated from the Eyes and Bill by a black line, although it seems to be produced beyond the Eyes to the hinder part of the Head, and to encompass the crown of the head (which is, as we said, of a lead colour.) The Throat and Cheeks under the Eyes black, with a mixture of grey in the ends of the feathers. In the Female the Back is of a dusky ash-colour: The Throat of a paler cinereous: The Breast red; the Belly white.

The quill-feathers in each Wing eighteen, as in other small birds, all dusky: The upper covert-feathers black, the nether red. The Tail is made up of the usual number of twelve feathers, of which the five outmost on each side are red, the two middlemost dusky, two inches and an half long.

The Bill is black: The Legs also are black in the Cock; in the Hen both Bill and feet are paler. The lowest bone of the outer Toe is joyned to that of the middle Toe. The Tongue is cloven: The mouth within yellow: The *Irides* of the Eyes of a hazel colour. The Eyes are furnished with nictating membranes.

It feeds upon Beetles, and other Insects, and comes to us in Summer-time.

It weighs half an ounce, is five inches long, and nine broad.

This bird, saith a late *English* Writer, is of a very dogged fullen temper: For it taken old, and ordered as formerly directed in the *Nightingale*, he will be sometimes so dogged as in ten days time never to look toward the meat, and when he feeds himself to continue a whole month without singing. This is also the shielt of all birds, for if the perceive you to mind her when she is building, she will forsake what she hath begun, and if you touch an Egg she never comes to her Nest more: And if you touch her young ones, she will either starve them, or throw them out of the Nest and break their necks, as I found by experience more than once. The Young are to be taken at ten days old, and to be fed and ordered as the *Nightingales*. Keep them warm in Winter, and they will sing as well in the night as the day, and will learn to whistle and imitate other birds. Taken young, and brought up, they become gentle and very tame.

Besides this common Redstart, *Gesner* and *Aldrovand* describe several other kinds, as 1. That which *Aldrovandus* makes his third, which *Gesner* describes thus: Its forehead is marked with a white spot: The feathers under the Bill are black. The Head and Back are of a cinereous or dusky colour. The Wing-feathers are dusky, moderately inclining to red. The Breast, Belly, and Tail are red; but the lower Belly whitish. The Tail consists of * eight feathers. For bigness this bird is inferior to the great *Timonie* or *Ox-eye*, equal to the *Robin-red-breast*. Its Bill is black, slender, long and straight.

The fourth of *Aldrovand* is in all points like this, save that the white spot on the forehead is changed into a long line: The Breast also seems to be more cinereous, and the lower belly not white.

2. The *Rotschrentzel* of *Gesner*, so called from the redness of the Tail, the description whereof he took from a Picture sent him from *Strasbourg*: Therefore we shall add

add no more concerning it, esteeming such Pictures less exact, and not much to be relied upon, who will may see the description in *Gesner*, or *Aldrovand* out of him.

3. The Bird called *Wegehecklin* about *Strasbourg*, *Gesner*. Its Breast was blue, the part between the Breast and Belly of a pale or yellowish red; which colour also the upper side of the Tail feathers, but not to the end, and those about the Rump, were of: The Bill is short, the Belly cinereous, not white, as the *Strasbourg* Picture represents it; the Legs dusky, not red, as in that Picture; and the feathers under the Bill not blue, but dusky and particoloured. The *German* name is imposed upon it partly from the ways; for it is much conversant about high ways, roads, and fields, and thence (as we guess) picks up worms and seeds that it finds on the ground; partly from the blue spot on its Breast, as I conjecture.

The *Redstart* (saith *Aldrovandus*) abides with us all the Summer, but in the end of the *Autumn* it either flies away, or hides it self, and in the Spring-time returns to us again. It feeds upon the same things, the *Robin-red-breast* doth, to wit, flies, crums of bread, Ants Eggs, and if I be not deceived, Spiders too. It builds its Nest in hollow trees.

CHAP. VIII.

The Robin-red-breast or Ruddock, Rubecula sive Erithacus, Aldrov.

Рексакъ, Christ.

THis bird denominated from its red breast, is so well known in almost all Countries, that it needs no long description. It weighs about half an ounce, being from Bill to Tail half a foot long; and between the tips of the Wings spread about nine inches broad. The Breast is of a red or deep Orange colour: which colour compasses also the Eyes and upper part of the Bill. The Belly is white; the Head, Neck, Back, and Tail of a dirty green or yellow, as in *Thrushes* [rather cinereous, with a tincture of green.] A line of blue divides between the red colour and the cinereous on the Head and Neck. Under the Wings is also seen something of Orange-tawny.

The exterior borders of the Wings are almost of the same colour with the back: the interior are something yellow. The Tail is two inches and an half long, and made up of twelve feathers.

The Bill is slender, of a dusky colour, more than half an inch long: The Tongue cloven and jagged: The *Irides* of the Eyes of a hazel colour. The Legs, Feet, and Claws of a dusky or blackish. The outer foretoe joyned to the middlemost at bottom, as in the rest of this kind.

In Winter-time to seek food it enters into houses with much confidence, being a very bold bird, sociable and familiar with man. In the Summer-time (as *Turner* saith) when there is plenty of food in the Woods, and it is not pinched with cold, it withdraws it self with its Brood into the most desert places. It is a solitary bird, and feeds singly, whence the Proverb took its rise, *Unum arbutum non alit duos Erithacos*. Of the manner of building its Nest thus *Turner* from ocular inspection. It makes its Nest among the thickest thorns and shrubs in Spineys, where it finds many Oak leaves, and when it is built covereth it with leaves, not leaving it open every way, but only one passage to it. On that side also where the entrance is, it builds a long porch of leaves before the aperture, the outmost end whereof when it goes forth to seek meat, it shuts or stops up with leaves. What I now write I observed when I was very young; howbeit I will not deny but it may build also after another manner. If any have observed another manner of building let them declare it, and they will very much gratify such as are studious of these things, and my self especially. What I have seen I have candidly imparted. The Male (saith *Olinia*) may be known and distinguished from the Female, by the colour of his Legs, which are blacker, and by certain hairs or beards which grow on each side his Bill. It feeds upon Worms and other Insects, Ants Eggs, Crums of bread, &c. For a Song-bird it is by some esteemed little inferior to the *Nightingale*.

They build commonly three times a year, in *April*, *May*, and *June*: Seldom have above five young ones, and not under four. You may take them at ten days old; if

FF 2 you

* Either this place is misprinted, or *Gesner* sure mistaken in the number of feathers: For all the *European* small birds I ever saw or heard of have twelve feathers in their Tails. *Gesner*, *Rothschrentzel*, *Art. 3. p. 48.*

you let them lie too long, they will be fullen. Feed them with sheeps heart and Egg minced small, in all points like the *Nightingale*; give them but little at once, and pretty often, for if you give them too much, they are apt to throw it up again. Be sure they lie warm, for they are tender birds. When they begin to be strong, cage them in a Cage, like the *Nightingales*, lined with bays, and having Moss at the bottom: And give them sheeps heart and Egg, or the *Nightingales* Pulse, or *Woodlarks* meat. In a Trap-cage with a meal-worm you may take a dozen in a day. The Cock may be known by his Breast being of a deeper red, and the red going up further upon the Head. He is subject to the Cramp, and zizzines. For the first give him three or four Meal-worms and Spiders: For the latter six or seven Earwigs a week.

CHAP. IX.

The Nightingale, Luscinia seu Philomela, 'Andros Græci.

The *Nightingale*, being the chief of all singing birds, is about the bigness of a *Goldfinch* or *Redstart*, long-bodied, of an ounce weight, from Bill-point to Tail-end seven inches long, and between the extremities of the Wings extended ten and an half broad. Its colour on the upper part, *viz.* Head, and back is a pale* fulvous, with a certain mixture of green, like that of a *Redwing*. Its Tail is of a deeper fulvous or red, like a *Redstart*. From its red colour it took its name *Rossignolo* in Italian. Its Belly is white. The parts under the Wings, the Breast and Throat are of a darker colour, with a tincture of green. In each Wing it hath eighteen quill-feathers, besides the outmost small one, the interior Webs whereof are livid, the exterior fulvous. The Tail, as we said, is red, not forked, two inches and an half long, compounded of twelve feathers. The Bill slender, straight, indifferently long, *viz.* measuring from the tip to the angles of the mouth, near an inch, of a dusky colour: The upper Chap a little longer and blacker than the nether, the nether paler, and flesh-coloured at the root or rise. The Bill for its figure resembles a *Thrush* or *Blackbird*. The Tongue is not very short, the mouth yellow within: The Irides of the Eyes hazel-coloured: The Ears great: The colour of the Feet and Claws a deep flesh. [*Olinia* attributes to the Feet a pale flesh-colour approaching to white.] But the colour varies according to the age, for in young birds it is fainter, in old ones fuller. The outmost foretoes are very near of equal length one to another, which the middlemost doth much exceed both in thickness and length. The Heel or Spur is strong, but not long as in *Larks*. The outmost Toe beneath is joyned to the middle one. The Guts are about ten inches long. The blind Guts very small.

This bird is not remarkable for any variety or beauty of colours, but well known from its singing by night. And now that mention hath been made of singing, I cannot forbear to produce and insert the elegant words of that grave Naturalist *Pliny*, concerning the *Nightingales* admirable skill in singing, her study and contention, the sweetness of her accents, the great variety of her notes, the harmonious modulation and inflection of her voice; which because I cannot so render in *English* but that they must needs lose much of their native *Emphasis* and Elegancy, I shall put down in the Language the Author wrote them. *Luscinia* (saith he) *diebus ac noctibus continuim quindecim garrulus sine intermissione cantus, densante se frondum germine, non in novissimum digna vivat ave. Primum tanta vox tam parvo in corpore, tam pertinax spiritus. Deinde in una perfecta musica scientia modulatus editur sonus: Et nunc continuo spiritum trahitur in longum, nunc variatur inflexio, nunc distinguitur concipio, copulatur intorto, promittitur revocato, infusatur ex inopinato: Interdum & secum ipse murmurat; plenus, gravis, acutus, creber, extensus, ubi visum est vibrans, summus, medius, imus, breviterque omnia tam parvis in faucibus, que tot exquisitis tibiarum tormentis ars hominum excogitavit: Ut non sit dubium hanc suavitatem premonstratam. Ac ne quis dubitet artis esse, plures singulis sunt cantus, nec idem omnibus, sed sui cuique. Certant inter se, palmamque animosa contentio est. Visita morte finit sepe vitam, spiritum prius desiciente quam cantu. Meditantur alie juniores, versisque quos imitantur accipiunt. Audit discipula intentione magna & reddit, vicibusque reticent. Intelligitur emendata correctio, & in docente quædam reprehensio. Thus *Pliny*.*

The

The Rhetorical Harangues of Modern Writers in commendation of the *Nightingale* I studiously omit, sith almost all they have concerning it is owing to *Pliny*, being either repeated in the same words, or a few only changed; or else composed in imitation of what we have delivered out of him. These things, though with me they scarce obtain belief, yet will they seem very credible, if compared with what *Gesner*, from the relation of a certain friend of his, delivers concerning the admirable faculty of these birds in imitating of humane speech. To these things (saith he) let me add a story which a friend of mine, a very learned and credible person, wrote to me.

Because you are writing of Birds, I will tell you something concerning *Nightingales* imitating mens voice, and repeating their discourses, which is indeed wonderful, and almost incredible, but yet most true, and which I myself heard with these Ears, and had experience of, this last Diet at *Ratisbone* in the year 1546. whilst I lodged there in a common Inn at the sign of the *Golden Crown*. Our Host had three *Nightingales*, placed separately, so that each was shut up singly by itself in a dark Cage. It happened that at that time, being the Spring of the year, when those birds are wont to sing indefatigably, and almost incessantly; I was so afflicted with the Stone, that I could sleep but very little all night. Then about and after Midnight, when there was no noise in the house, but all still, you might have heard strange janglings and emulations of two *Nightingales*, talking one with another, and plainly imitating mens discourses. For my part I was almost astonished with wonder. For they in the night-season, when all was whist and quiet, in conference together produced and repeated whatever they had heard in the day time from the Guests talking together, and had thought upon. Those two of them which were most notable, and masters of this Art, were scarce ten foot distant one from the other: The third hung more remote, so that I could not so well hear it as I lay in bed. But those two it is wonderful to tell, how they provoked one another, and by answering invited and drew one another to speak. Yet did they not confound their words, talking both together, but rather utter them alternately, or by course. But besides the daily discourse, which they had lately heard of the Guests, they did chant out especially two stories one to the other for a long time, even from Midnight till Morning, so long as there was no noise of men stirring, and that with that native modulation and various inflection of their notes, that no man, unless he were very attentive and heedful, would either have expected from those little Creatures, or easily observed. When I asked the Host, whether their Tongues had been slit, or they taught to speak any thing? He answered no; whether he had observed or did understand what they sung in the night? He likewise denied that. The same said the whole Family. But I who could not sleep whole nights together, did greedily and attentively hearken to the birds, greatly indeed admiring their industry and contention. One of the stories was concerning the *Tapster*, or * *Houlic-knight* (as they call them) and his Wife, who refused to follow him going into the Wars, as he desired her. For the Husband endeavoured to persuade his wife, as far as I understand by those birds, in hope of prey, that she would leave her service in that Inn, and go along with him into the Wars. But she, refusing to follow him, did resolve either to stay at *Ratisbone*, or go away to *Nuremberg*. For there had been an earnest and long contention between them about this matter, but (as far as I understood) no body being present besides, and without the privacy of the Master of the House; and all this Dialogue the birds repeated. And if by chance in their wrangling they cast forth any unseemly words, and that ought rather to have been suppressed and kept secret, the Birds, as not knowing the difference between modest and immodest, honest and filthy words, did out with them. This dispute and wrangling the Birds did often repeat in the night time, as which (as I guessed) did most firmly stick in their memories, and which they had well conned and thought upon. The other was a History or Prediction of the War of the Emperor against the Protestants, which was then imminent. For as it were prophesying they seemed to chant forth the whole business as it afterwards fell out. They did also with that story mingle what had been done before against the Duke of *Brunswick*. But I suppose those Birds had all from the secret conferences of some Noblemen and Captains, which as being in a public Inn, might frequently have been had in that place where the Birds were kept. These things (as I said) they did in the night, especially after twelve of the clock, when there was a deep silence, repeat. But in the day-time for the most part they were silent, and seemed to do nothing but meditate upon, and revolve with themselves what the Guests conferred together about either at Table, or else as they walked. I verily had never believed our *Pliny* writing

* A Lion colour, or deep gold colour.

* Servant of the house.

writing so many wonderful things concerning these little Creatures, had I not my self seen with my Eyes, and heard them with my ears uttering such things as I have related. Neither yet can I of a sudden write all, or call to remembrance every particular that I have heard.

The *Nightingale* is very impatient of cold, and therefore in Winter-time either hides it self in some lurking place, or flies away into hot Countries. *Ireland* (as *Botermus* relates) is altogether destitute of *Nightingales*; which whether it be true or not I cannot tell. In the South part of *England* in Summer time they are very frequent, but in the North more rare. Some build upon the ground at hedge-bottoms, others in thick green bushes and shrubs. They lay four or five Eggs.

It is called in *Italian*, *Rossignolo*, from its red or fulvous colour; or (as *Aldrovandus* rather thinks) from the diminutive *Latine* word, *Luscinola*.

In *Italy* among those little birds, which growing fat in the Autumn are sold indiscriminately for *Beccafico's*, the *Nightingale* is one.

It breeds in the Spring-time about the month of *May*, building its Nest of the leaves of trees, straws and moss. It seldom sings near its Nest for fear of discovering it, but for the most part about a stones cast distant.

It is proper to this Bird at his first coming (saith *Olinia*) to occupy or seize upon one place as its Freehold, into which it will not admit any other *Nightingale* but its Mate.

It haunts for the most part in cool or shady places, where are little Rivulets of water, such as are Quick-set hedges, small groves, and bushes, where are no very high trees, for it delights in no high trees except the Oak.

Additions to the History of the Nightingale out of *Olinia*, and others.

§. I.

The choice of the Nestlings, and how to take and order them for singing.

Make choice of such to bring up for singing as are bred earliest in the Spring; because, 1. They prove the best singers, as having more time to con and practise their notes before Winter. 2. They are easiest rear'd, and become strong to endure the cold, having mued their feathers before Autumn, whereas the second brood, muing them later, are subject to be over-run with Vermine, and often surprized and killed by the cold, while they are bare of feathers. 3. Such consequently prove more healthful and long-lived.

The young *Nightingales* (saith *Olinia*) must be taken when they are well feathered; [saith a late English Author, when they are indifferently well feathered, not too little, nor too much: If too much, they will be fullen; and if too little, if you keep them not very warm, they will die with cold, and then also they will be much longer in bringing up;] and together with the Nest put in the bottom of a little basket made of straw, covering the Nest so that they cannot get out, nor tangle or double their Legs; keeping them at first in a quiet place where few people resort, feeding them eight or ten times a day with heart of a Veal or Weather raw, well cleaned and freed from skin, films, sinews, and fat, cut into small pieces of the bigness of a writing Pen. [Our English Author mingles a like quantity of white bread, soaked in water, and a little squeezed, with the flesh, chopping both small as if it were for minced meat,] giving to each bird upon a stick end two or three small pieces [of the quantity of a grey Pease] at a time. Make them drink two or three times a day, by putting to them a little Cotton-wool dipt in water, on the end of a stick: Keeping them in this manner covered, till they begin to find their feet, and leap out of the Nest: Then put them in a Cage with fresh straw, fine moss or hay at the bottom, [lining the Perches with green bays, for they are very subject to the cramp at the first] feeding and ordering them as before, till you see they begin to feed themselves, which you shall perceive by observing them pick the meat from the stick; then take of the heart some pieces of the bigness of a nut, and fatten them to the Cage sides. When they are come to feed themselves, give them four or five times a day a gobbet or two. Let them have a cup of water very clean and bright, changing the water in Summer-time twice a day, doing the same by the flesh, that it grow not fower nor stink. When they are

are fully grown, put into little boxes with stone bottoms, on one side of the Cage crums of Paste, such as we shall anon describe, and on the other side Sheeps heart, such as was before mentioned. When they begin to moult (saith our English Author) give them half an Egg hard boiled, and the other half sheeps heart, with a little Saffron mixt in the water, for you must not make it too stiff, nor too limber. Give them no Duck-eggs: For I had six *Nightingales* killed one night with a Duck-egg.

Among these Nestlings the Cock may be known from the Hen by this token: After he hath eaten he will get up the Perch, and begin to tune or record to himself, which you shall perceive by the motion of his Throat, whereas the Hen at first records little, or not at all. Moreover, the Cock is wont to stand sometimes for a good space upon one foot; otherwhiles to leap or run furiously to and fro in the Cage, and to draw out his warbling Notes with a long continuance. Some are of opinion that these Nestlings sing not comparably to the wild *Nightingales*, because they want the teaching of their Dams. Wherefore to make them prove good, it is convenient to place them near one that hath the right wild note. But experience confutes this observation, these proving as well as those: Nature without any other teacher instructing them to utter the notes proper to their own kind. *Herein I must crave leave to dissent from Olinia, for Authors generally agree, and experience confirms it, that old Nightingales do teach their Young their Airs, and that of all birds Nightingales emulate one another, and other birds, yea, and men too, in singing most.*

For finding the Nest where the Cock sings, and if to be he sings long in a place, then the Hen sits not far off; but if he hath young ones he will now and then bemit sing, and then the Hen when you come near her Nest will tweet and cur: And if you have searched long and cannot find it, stick a meal-worm or two upon a thorn, and observe which way the Cock carries them, and stand still, or lie down, and you will hear the Young when the old one feeds them, (for they make a great noise for so small a bird.) When you have found the Nest if they be not fledg'd enough, touch them not, for if you do they will never tarry in the Nest.

These Nestlings sing for the most part in the Autumn, and sometimes in the Winter, if they be kept in a warm Chamber, or in a place where the air is temperate. *Olinia.*

§. II.

How to take Branchers, and old Nightingales, and to order them when taken.

When you have found the birds haunts, they may be taken by a Trap-cage, or Net-trap; described in *Olinia*, and in the forementioned English Author; baited with a meal-worm, or other worms or Maggots. So soon as you have taken the *Nightingale*, tie the tips of his wings with some brown thread, not straining it too hard, that he may not have strength to beat himself against the top and wires of the Cage, for by this order he will grow tame sooner, and be more apt to eat his meat. You shall shut him up in a Cage covered above half with green Bays, or brown paper, [Olinia saith, covered with paper, and for a while without Perches] or else turn the Cage from the light in some private place, that at first he be not disturbed, to make him wilder than he would be. * Feed him five or six times at the least every day with sheeps heart and Egg shred small and fine, mingling amongst the same some red Ants, and three or four red Earth-worms. And because no *Nightingale* will at first eat any sheeps heart or Paste, or hard Egg, but live meat, as Worms, Ants, Caterpillars, or Flies; therefore taking him out in your hand, you must open his Bill with a stick made thin at one end, and holding it open, give him a gobbet about the bigness of a grey pease: Then when he hath swallowed that, open his Bill and give him another, till he hath had four or five such bits: Then set him some meat mingled with store of Ants, that when he goes to pick up the Ants he may eat some of the sheeps heart and Eggs with it. At the first you may shred three or four meal-worms in his meat, the better to entice him, that so he may therewith eat some of the sheeps heart by little and little; at last when you perceive him to eat, give him the lefts Ants in his meat, and at last nothing but sheeps heart and Eggs. [Olinia makes no mention of forcing meat down his throat, but only laying it by him in the Cage, and advises to tie or fasten some pieces of heart to Maggots and Caterpillars, to inure the bird to eat flesh.] Our Author also, if the bird be fullen, advises to get some *Gentles* or *Maggots*, and take your paste and roll it up in pieces like to little worms about half an inch long, and

* Birds taken in April must be a seven or eight times a day, for then they are apt by half to die for want of food than in July or August.

and put amongst them some Ants, and put your Maggots at the bottom of your pan, then put your paste rolled like worms upon the Maggots, and they stirring at the bottom will make the paste move as if it were alive; which will cause the *Nightingale* to eat it more readily; and when he hath tasted the meat made of sheeps heart, and paste two or three times, he then is not apt to forsake it. *But whereas he saith, that Nightingales feeding only upon live meat do not know that any thing is for food but what stirs, he is surely therein mistaken, for (as Olinia observes) they feed upon Figs, and some sorts of berries, when wild, as well as upon Insects.* Such birds as you take in April our Author advises when you go a taking to carry a bottom bag with you, and some meat in a Gally-pot to feed them abroad, for if they be over-fasted they seldom live, they requiring to be fed every hour: Also to put or cut their feathers from their vent, otherwise they will be subject to clog and bake up their vent, which is sudden death. Birds, that are long a feeding, and make no curring or sweeting for eight or ten days, seldom prove good; but on the contrary, they give great hopes of proving well when they take their meat kindly, and are familiar, and not buckish, and sing quickly, and learn to eat of themselves without much trouble. This is a sure token of their proving excellent birds: For I have had some birds feed in twelve hours after taking of them, and sing in two or three days, and those never proved bad. When you shall find that the *Nightingale* eats well by himself, and sings often without seeming to be disturbed at every little noise, you shall by little and little put back the green Bays or Paper wherewith the Cage was covered, putting some Greens in the opened part.

How to discern
the Cocks
from the Hens.

Now to know the Cocks from the Hens among the wild ones, *Olinia* gives us these marks of the Cock, That it hath a bigger Eye, and rounder and greater Head, a longer Bill, thicker Legs, a longer Tail, and of something a brighter red. Our English Author will not allow these for sufficient notes of distinction; and yet afterward he dare not deny but all taken together may be sufficient. He adds, that *Nightingales* taken in *August* are most certainly to be discerned by the singing: And as for those that are taken in *April*, your knowledge, saith he, resteth in these observations: First, when you think you have taken the bird you heard sing, call again, and if the Cock answers and sings again, then you have taken the Hen, and not the Cock; but if you find the Cock not to sing, then be assured you have taken him. Also you may know him by the lower parts of the Sex, which the Cock puts forth, but the Hen doth not. If you take a bird about the middle of *May*, or beginning of *June*, the Breast of the Hen will be bare with sitting, and all full of scurf, whereas the Cocks Breast is all well-feathered, without any bareness or scurf.

This Author saith, that he hath often proved, that old *Nightingales* are far perfecter, and far excellent in their songs than any Nestling or Brancher whatsoever, and will come to sing as lavishly and as often, and with care and a little trouble will know you, and be as familiar also.

Branchers (saith *Olinia*) are better than Nestlings, and will come to be as familiar, and very often sing all Winter. [Understand it in *Italy* where their Winters are short and mild.]

§. III.

What Cages are best for Nightingales.

THE most convenient Cages for *Nightingales* are those which have the Wires only afore, and all the other parts made up, and the top lined with Bays, [the sides also against Winter] partly for warmth, the *Nightingale* being a very tender bird, and partly also because being buckish he is apt to mount up and strike his head against the top-wires or wood, and endanger the dashing out his brains.

§. IV.

How to make a Paste to feed Nightingales, being also good for the Wren, Robin-red-breast, Woodlark, Skye-lark, Throatsle, and other birds.

TAKE of the flower of Chiches [or horse-beans] finely sifted two or three pounds, according to the number of birds you keep: Of sweet Almonds blanch'd and beaten fine half a pound, of fresh Butter [without any salt in it] four ounces, three or four Yolks of Eggs boiled hard and pounded. Put these ingredients in

in a Pan of the fashion of that they make Confects in. Set the Pan on a Trevet over a fire of Charcoal, taking care that it be not smoaked, and stirring it constantly with a wooden stick or *Spathe*, that it burn not to the bottom till it be sufficiently boiled. Then take a pound of Honey, and three ounces of Butter, and melt it in any little Vessel, still scumming of it; and when it is well melted and boiled, let your assistant, with a Ladle having a hole or two in the bottom, take it up, and pour it upon the Paste, gently moving his Ladle up and down, you in the mean while continuing to stir your Paste till it be well incorporated and grained. This Paste serves for the Summer: For the Winter, take a pretty quantity of Saffron and mingle with the Paste, for it is hot and opening, and will maintain the bird more chearful and lively. Then take it from the fire, and pass it through a Sieve or Colander with round holes of the bigness of an ordinary Tare. That which will not pass through of it self force through with your hand. Then spread it upon a Table, covered with a white clean cloth, to dry; and when it is sufficiently dry, put it up in a Pot. If it be too dry, you may moisten and mollify it with a little honey. This Paste will last three or four, and sometimes six months, and serves for all sorts of small soft-beaked birds.

Many other sorts of Paste may be made like this of less charge; as instead of Almonds to use Walnuts, &c. These Pastes are best kept in earthen Vessels of white ware, covered close with Parchment, and set in a place rather moist than dry.

§. V.

The Nightingales diseases, and their cures.

FIRST, note that the principal thing which causes most diseases, not only in *Nightingales*, but in other birds kept for singing, is want of keeping them clean and neat, whereby they clog their feet, which causes the Claws of several to rot off, and breeds the Cramp and Gout in others, and makes them never thrive, nor delight in themselves. No birds can be kept too clean and neat. Therefore be sure to let them have twice a week gravel at the bottom of the Cage, and let it be very dry when you put it in, for then it will not be subject to clog.

The *Nightingale* in Autumn is apt to grow extraordinary fat and foggy; [I have had several when fat to be three weeks and not eat one bit of meat] to remedy which during that time give him two or three times in a week worms taken out of a Pigeon-house, two or three at a time, or two or three field-Spiders a day, which will purge and cleanse them extraordinarily. Upon the falling of his fat he must be kept warm, and have some Saffron given him in his meat or water. To raise them when they are very lean and poor, give them new figs chopt small among their meat, continuing no longer than till they have recovered their flesh.

Nightingales that have been kept two or three years in a Cage are very subject to the Gout: Which when you shall perceive, take them out of their Cage, and anoint their feet with fresh Butter or Capons grease: Do so three or four days together and it is a certain cure for them.

Another thing that *Nightingales* are subject to, is breakings out about their Eyes and Neb; for which likewise use your fresh Butter or Capons grease.

There also happeneth unto the *Nightingale* a straitness or strangling of the breast; which comes very often for want of care in making of their meat, by mincing fat therewith; and you may perceive it by the beating pain not afore accustomed that he abideth in this place, and also by his often gaping: Other whiles this disease happeneth by reason of some finew or thread of the sheeps heart (for want of well shredding) hanging in his throat, or claspings about his Tongue, which causeth him to forsake his meat, and grow very poor in a short time, especially if it be in the Spring time, or when he is in long. When you shall perceive it by his gaping, &c. take him gently out of his Cage, and open his bill with a quill or pin, and unloosen any string or piece of flesh that may hang about his tongue or throat: After you have taken it away, give him some white Sugar-candy in his water, or else dissolve it, and moisten his meat, which is a present remedy to any thing that is amiss.

If they grow melancholy, put into their water some white Sugar-candy; and if that will not do, about six or eight Chives of Saffron, continuing withal to give them the Paste and sheeps heart shred very fine, and also three or four meal-worms a day, and a few Ants and Ants Eggs: Also boil a new-laid Egg, and chop it small, and brew it among the Ants and their Eggs.

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§. VI.

p. VI.

How to provoke a Nightingale to sing.

TO make *Nightingales* sing more than ordinarily, or at such times as they are not wont, give them in Winter-time Piste of Pine kernels pounded, and in their drinking-cups a chive or two of Saffron: For those two things by heating them, render them cheerful and brisk, without inducing any noxious alteration, and so excite them to sing. That sympathy also which this bird hath with Music both vocal and instrumental is of exceeding force to this purpose. And therefore if in the Chamber where she is kept there be a consort of sweet sounds or voices, she is marvelously provoked to sing. Many stories we have of *Nightingales* emulating and striving to outvie one another, and other birds, yea, and men too in singing: Nay, that sometimes a bird will strain her note so to exceed that of her Antagonist, that she will fall down dead upon the spot with contending and over-straining her self.

Olinia hath the receipt of an odoriferous unguent to stir up a *Nightingale* to sing.

Take of Civet not sophisticated twenty grains, *Benjamin* and *Storax calamita*, of each three grains, mingle these together in a Mortar in the form of a soft ointment; Then diligently observe the bush and particular branch, on which the *Nightingale* is wont to sit and sing, and there making as it were a little shelf of the leaves and boughs, lay thereon some meal-worms, and anoint the branch next to your self with this Unguent. The *Nightingale* when he returns from feeding, will presently fly up to his bough, and finding there the meal-worms will fall a eating of them, and sending the odour of the Ointment will begin to sing, and being as it were intoxicated with the perfume, will not give over, nor stir from the place though you take the boughs from about him. For as the *Nightingale* exceeds all other birds in singing, so doth he also in the exquisiteness of his sent: Wherefore also when wild he doth most willingly haunt where sweet herbs grow: And is particularly delighted in Musk, so that a grain or two of true Musk put in Cotton, and that in a small Reed serving for him to perch on in his Cage, will provoke him to sing.

CHAP. X.

The Black-cap: *Aticapilla* seu *Ficedula*, *Aldrov.* called by the *Greeks*, Συζαλὶς & Μεδάγχιππος, by the *Italians*, Capo Negro.

THIS is a very small bird, not weighing above half an ounce: Its length from the tip of the Bill to the end of the Tail is six inches; its breadth between the ends of the Wings stretch out nine. The top of the Head is black, whence it took its name: The Neck cinereous; the whole back of a dark green. The quill-feathers in each Wing eighteen in number, of a dusky colour, save that their edges are a little green. The Tail hath twelve feathers, two inches and an half long, and almost equal, sharp-pointed, of a dusky colour, with a little tincture of green. The nether part of the Neck, the Throat, and upper part of the Breast are of a pale ash-colour: The lower Belly white, tintured with yellow. The Bill straight, slender, black, longer, and less than in the *Titmice*: The Tongue cloven and rough: The Feet of a lead colour, the Claws black. The outmost Toe below is fitted to the middlemost. The head of the Female is of a brown or chestnut colour rather than black.

This bird is frequent in *Italy*, it is also found in *England*, but more rarely, *Turner* in vain contradicting.

Gesner saith, that the first Summer the head of these birds is red, and afterward grows black, and that in the Cocks only, for in the Hens it continues always red. The Ancients report, that the *Black-caps* [*Aticapilla*] in the beginning of Autumn are changed into *Ficedula*, or *Beccaficos* by the mutation of their voice and colour; from whom, till I be assured by experience, I must crave leave to dissent.

*The

* The fourth Beccafico of Aldrovand.

The *Beccafico* described by *Aldrovand* in the fourth and fifth place in his Chapter of *Ficedula* may perchance differ specifically from our *Black-cap*. On the upper side, Head, Back, Wings, and Tail it is of a brown colour, inclining to a chestnut. The Female on the nether side is all white; the Male from white declines to cinereous. The quill-feathers of the Wings in the Male are black, with some white ones intermixt: In the Female they incline to a chestnut colour, as doth also the Tail, which in the Cock is black. Contrariwise, the Feet in the Cock incline to a chestnut colour, in the Hen are black.

Beccafico's abound in *Candy*, as *Bellonius* witnesses, and also in the Island of *Cyprus*, where they are salted up in great numbers, and transported into other Countries. With us in *England* they are called by a general name, *Cyprus-birds*, and are in no less esteem with our Merchants for the delicacy of their taste, than they were of old with the *Italians*: And that deservedly, (saith *Aldrovandus*) for feeding upon two of the choicest fruits, viz. Figs and Grapes, they must needs become a more wholesome food than other birds, yielding a better nourishment, and of more easy concoction. *Beccafico's* are accounted best and most in season in the Autumn, as being then fattest by reason of the plenty of meat that season affords them. At which time they are highly prized and coveted by the *Italians* even now a days.

CHAP. XI.

The golden-crowned Wren: *Regulus cristatus*, *Aldrov.* lib. 17. cap. 1. *The Trochilus* of *Pliny* and * *Aristotle*, who also calls it *Pterocelus* and *Bazindus*. * *Hist. Animal.* lib. 9. cap. 11. Others call it by a diminutive word *Bazindus*. In *Tuscany* it is called *Fior Rancio*, that is, the Marigold Flower, from the colour of its Crest.

THIS is the least of all birds found with us in *England*, weighing not more than one single drachm. Its length from the tip of the Bill to the end of the Claws is four inches and an half, to the end of the Tail four and a quarter. The breadth of the Wings extended six and three quarters. The top of the Head is adorned with a most beautiful bright spot, (which they call a crest) of a deep Saffron or pale Scarlet colour. Hence it got those ambitious titles of * *Regulus* and *Tyrannus*. * *Little King* and *Tyrant*. This Crest or Crown (if you please so to call it) it can when it lists, by corrugating its forehead, and drawing the sides of the spot together, wholly conceal and render invisible. It is of an oblong figure, and extended directly through the middle of the Head from the Bill towards the Neck. The edges of it on both sides are yellow; the whole is environed with a black line. The sides of the Neck are of a lovely shining yellowish green colour. The Eyes are encompassed with white. The Neck and all the back from a dark green incline to yellow. The Breast is of a lardid white. [In the bird that I J. R. described the Breast and Belly were dashed with a faint green.] The Wings were concave, not much unlike to a *Chaffinches* Wings. The quill-feathers of the Wings, as in almost all small birds, were eighteen, all of a dusky colour, only their exterior edges yellowish, and their interior whitish. The tips also of the three next to the body were white. But what was most especially notable in the Wings of this bird was, that the middle quill-feathers, or indeed all excluding the five outmost, and the three inmost, had their exterior Webs, as far as they appear above the covert feathers, to a considerable breadth black, so that when the Wings are shut they make a black spot of a good bigness about the middle of each Wing. The outmost quill-feather was very short and little. The covert-feathers of the first row have white tips, all together making a white line across the Wing. Above also towards the ridge of the Wing is a white spot.

The Tail is made up of twelve sharp-pointed feathers, an inch and half long, not forcipate, of a dusky colour, only the exterior borders of the feathers are of a yellowish green.

The Bill is slender, straight, black, half an inch long. The feet yellowish, and the Claws of a not much different colour. The Tongue long, sharp, and cloven. The *Irides* of the Eyes of a hazel colour.

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The

The Stomach small, musculous, and full of Insects; whence it is manifest (as *Aristotle* rightly faith) that it is a vermivorous bird. The Female, as in most other birds, hath not so fair colours.

We saw of these birds first to be fold in the Market at Nuremberg: Afterwards our worthy Friend Mr. Fr. *Jessop* of Broomhall in Sheffield Parish, whom we have occasion often to mention in this Work, sent us of them, which he had found and caught in the Mountainous Woods about *Higbloe*, near *Hatheredge* in the Peak of *Derbyshire*. The same also found them here in *Middleton Park* in *Warwickshire*, where he shot them and brought them to us. They abide and haunt for the most part on the tops of trees, especially Oaks.

What is spoken of the antipathy and feud between this bird and the *Eagle* we look upon as an Old Wives Fable. *Aldrovandus* writes, that she lays six or seven Eggs together before she sits, not bigger than Pease.

CHAP. XII.

A little yellowish Bird without name, called by *Aldrovandus* *Regulus non cristatus*, perchance the *Aflus* of *Bellonius*, or the *Luteola* of *Turner*.

THIS is equal to, or somewhat bigger than the crested Wren, weighs two drachms, being in length from the tip of the Bill to the end of the Tail, or, which is all one, the end of the Claws five inches, in breadth between the extremities of the Wings extended seven.

All its upper side, save the Wings and Tail, is of a dusky or cinereous colour, tinged with green. The Rump is greener than the rest of the Back. A yellowish line is produced from the Nostrils above the Eyes almost to the hinder part of the Head. Thence the side, viz. the Throat, Breast, and Belly is white with a dash of green, and sometimes yellow. The Wing and Tail-feathers are dusky, having their outer edges green. The feathers under the bastard-wing, and the coverts of the under side of the Wings, from green decline to a lovely yellow. Each Wing hath eighteen prime feathers, the outmost of which is very short and small. The Tail is two inches long, not forked, made up of twelve sharp-pointed feathers.

Its Bill is slender, straight, sharp, half an inch long, the upper Mandible being dusky on the outside; but the angles of the Mouth are yellowish: The mouth within yellow. The Nostrils are large: The Legs and Feet small, of a dusky Amber colour. The outmost fore-toe at bottom grows to the middle one. Its Gizzard is small. It sings like a *Grasshopper*, and doth much frequent Willow-trees. It is much in motion, continually creeping up and down trees and shrubs, and sings with a querulous note. It builds its Nest of moss, and straws, and a few feathers and hairs within. It lays five Eggs all over besprinkled with red specks.

The birds of this kind vary in colour, some being of a paler, some of a deeper green or yellow: in some the Belly is white, without any tincture of green.

Mr. *Jessop* set us a bird in all points exactly like that here described, and whose note also resembled the noise of a *Grasshopper*, but twice as big.

Now that the Reader may judge whether the *Aflus* of *Bellonius* be the same with this bird, as we suppose, we will subjoin *Bellonius* his description thereof.

The *Aflus*, * faith he, is of all birds the least, except the *Regulus* and *Tyrannus* (that is, according to him, the common Wren, and the crested Wren) at least there is none less than it. It is almost always singing. It would be like to the crested Wren, were not the crest on its Head yellow. And yet it is yellow in the folds of its Wings, and in their extremities, as also upon the Back, and about the Tail. The Legs, Feet, Claws, and Bill are black; but both the extremities of the Bill have something of yellow. It is long, weak, and fit to catch Insects, upon which it feeds, refusing grain, and lives in the shady places of Woods. *Aristotle* mentions a little bird by the name of *Oesperus*, *Gaza* renders it *Aflus*, thought to be so called because it is not much bigger than the Insect *Oesperus*.

The greater not crested *regulus*.

* *A. i. v. lib. 7. cap. 6.*

CHAP. XIII.

The Wren, *Passer troglodites* of *Aldrovand*, by *Turner* and *Bellonius* called *falsly* *Regulus*.

IT weighs three drachms, being extended from the point of the Bill to the end of the Tail four inches and an half: The Wings stretch out equal to six inches and an half. The Head, Neck, and Back are of a dark spadiceous colour, especially the Rump and Tail. The Back, Wings, and Tail are varied with cross black lines. The Throat is of a pale yellow, the middle of the Breast whiter: Below it hath black transverse lines, as have also the sides. The lower Belly is of a dusky red. The tips of the second row of Wing-feathers are marked with three or four small white spots. The tips of the covert-feathers of the Tail are alike spotted. The number of quill-feathers in each Wing is eighteen. The Tail, which for the most part it holds erect, is made up of twelve feathers.

The Bill is half an inch long, slender, yellowish beneath, dusky above: the Mouth within side yellow: The Irides of the Eyes hazel-coloured. The outer Toes are fastened to the middle one as far as the first joint. It creeps about hedges and holes, whence it is not undeservedly called *Troglodites*. It makes but short flights, and if it be driven from the hedges, may easily be tired and run down.

It builds its Nest sometimes by the Walls of houses, in the back-sides of Stables, or other Out-houses covered with straw, but more commonly in Woods and Hedges, without, of Moss, within, of hairs and feathers. This Nest is of the figure of an Egg, creft upon one end, and hath in the middle of the side a door or aperture, by which it goes in and out. Being kept tame it sings very sweetly, and with a higher and louder voice than one would think for its strength and bigness; and that especially in the Month of May, for then it builds and breeds. It lays nine or ten, and sometimes more Eggs at a sitting.

A late English Writer tells us, that he hath had eighteen Eggs out of one Nest, and sixteen young ones out of another. It is strange to admiration that so small a bodied bird should cover so great a number of Eggs, and more strange, that it should feed such a company of young, and not miss one bird, and that in the dark also. They breed twice a year, about the latter end of April, and beginning of June, or middle of it. The Young are to be fed and rear'd like the young *Nightingales*, giving them often, and but one or two morsels at a time. Give them once in two or three days a Spider or two.

It perfectly cures the Stone of the Kidneys or Bladder (as *Aetius* writes) being salted and eaten raw; or being burnt in a pot close-covered, and the ashes of one whole bird taken at once, either by it self, or with a little * *Phyllon* and Pepper; or, lastly, being roasted whole, only the feathers plucked off and cast away.

All the Modern Writers of the History of birds before *Gesner* take this bird to be the *Regulus* of the Ancients.

* A kind of *Mercury*.

CHAP. XIV.

The Humming Bird, Guainumbi of Marggrave, and Johnston in his *Natural History of Birds*: Guaiminibique of Jo. de Laet in his *Description of the West Indies*, Book 15. Chap. 7. Gonambuch, or Gouambuch of *Lerius* in the eleventh Chapter of his *American History*, and of *Thevet* in his 48. Chapter of the singularities of *Antarctic France*; *Tomincio* of *Josephus à Costa* in Book 4. Chap. 37. of his *Natural and Moral History of the West Indies*, so called perchance because it is so light, that it weighs only one Spanish Tomino, that is, twelve grains. *Ourlitia*, (that is, a Sun-beam) or *Tomincio* of *Clusius* in Book 5. of his *Exotics*, Chap. 7. *Passer Mosquitus* of *Oviedo* in his *Summary*, Chap. 48. *Hoitzitzil* of *Fr. Hernandez* in Book 9. Chap. 11. *Rerum medicarum Novæ Hispaniæ*. *Gomara* in *Historia de Mexicana urbis expugnatione*, *Vicicilin*.

This kind of bird, whose Synonyma we have given, is the least of all birds. It comprehends under it many Species, or differences of which in general these things are delivered by those who have written of it.

1. That it moves the Wings with that swiftness, as not to be discerned by the Eye, so that it seems rather to want Wings; and that as it flies it makes a humming noise like a Hornet or Bee; inasmuch that one who should see it flying by, would take it rather to be a Hornet than a Bee: Hence it took its name in English of *humming bird*. It will also so poise it self by the help of its Wings for a long space of time, as if it rested and stirred not, and so, being on the Wing, suck the flowers with its Bill, for it lights not upon them. But when it moves from one place to another, it is carried with that velocity like a bullet through the air, that very oft it cannot be seen or discerned as it flies along.

2. That it is fed and nourished with honey, dew, and the juice of flowers, which it sucks out of them with its Bill, or rather its very long Tongue, provided and fitted by nature for that use; so that, being taken alive, they cannot be kept for want of food, but die in a short time.

3. That it lies torpid or sleeps in Winter [hanging by the feet on a bough in some open place, according to *Franc. Lopez*: The Bill being fastned to the trunks of Pines or other trees, according to *Honander* and *Rechus*] and in the Spring revives or awakens, whence also these birds are called * *Renati* by the Inhabitants of the *Caribbee* Islands, viz. so long, say they, it continues alive, as the honey-bearing flowers endure, and when they wither and fall it becomes torpid, and continues without sense or motion for full six months (space until new flowers come. Neither (saith *Hernandez*) is this an idle tale, or such a thing whereof one may well doubt: For this bird hath been more than once kept in a Chamber fastned to the * stock of a tree, and when it had hung as it were dead for six months, at what time Nature had appointed, it revived, and being let go flew away into the neighbouring fields. Believe it who will, I am not wont rashly or hastily to give credit to such relations: Though I know it is taken generally for an undoubted truth, and I find our Mr. *Josseline* in his *New Englands* rarities to report it for such. And truly if it lives only upon what it sucks out of flowers, in the Northern parts of *America*, when flowers fall it must either lie torpid, or fly into the hotter Countries. But in the more Southern parts of *America* (as in *Brasil*) *Marggravius* writes, that these birds are found all the year long in the Woods in great numbers.

4. Of the feathers of these and other birds of beautiful colours the Indians make the likenesses (for Pictures we must not call them) of Saints, and other things so dextrously, and artificially, and to the life that one would think they were drawn with a Pencil in colours, of which we have seen many in the Cabinets of the *Virginij*.

5. Although almost all the *Spaniards* who have written of the *West India* matters, have made mention of this bird, yet (which is strange) do they take no notice at all of its singing: Only *Lerius* and *Thevetus*, both *Frenchmen*, do attribute to it so high and sweet a note, that it gives not place to our *Nightingale*, which no man, who should

should not hear and see it, could easily be persuaded, could possibly proceed from so small a body. *Marggravius* affirms, that they do not sing, but cry, *Screp, screp, screp*, with one tone, and that almost continually, like Sparrows.

Marggravius describes nine sorts of this bird in the fifth Book of his *Natural History of Brasil*, Chap. 4.

1. The length of the whole body of this first kind from the beginning of the Head (where the Bill is inserted) to the rife of the Tail is two inches. The Head, together with the feathers, is of the bigness of a mean-sized sweet Cherry: The Neck is three quarters of an inch long; the body an inch and a quarter. The body, together with the feathers, is scarce equal in bigness to a Spanish Olive. It hath a slender, and very sharp, round, even, straight Bill, yet toward the end a little inclining downward, an inch and half long. The colour of this Bill is black, excepting the lower Chap toward the rife, where it is reddish. It hath a double or cloven Tongue, very small or slender, like a fine filken thread, white, long, so that it can thrust it forth far beyond the Bill: Small black Eyes; very small and short Legs and Feet, of a black colour: Four Toes in each foot, three standing forward, and one backward, armed with long semilunar, very sharp, black Claws. It hath a straight Tail, an inch long, consisting for the most part of four feathers. The Wings, which are of two inches length, reach almost to the end of the Tail. Nature hath shewn a singular Art in the composure of the Wing-feathers. From the rife of the Wings for about three quarters of an inch there is a double row of feathers one longer than the other, and the feathers are put one upon another, as it were short wings upon long ones. Then after these feathers come the Wing-feathers (which are about ten) the subsequent interior being still longer than the precedent exterior, so that the inflexion, determining the end of the Wing, is the longest of all. These Wings being spread it can fly a long time, and rest in the same place, as it were hanging in the air. As it flies it makes a noise like a *Bruchus*, or more truly, like a linnen Spinning-wheel, *Hur, hur, hur*. The feathers of the Wings spread appear very thin and transparent. The colour of the feathers of the whole Head, the upper side of the Neck, the sides, the whole Back, and the beginning of the Wings is wonderfully resplendent, so that it cannot be well represented by any Painter, for with a green, such as is seen in the Necks of *Peacocks* and *Mallards*, a golden, flame-colour, and yellow are strangely mixt, so that being exposed to the Sun-beams it shines admirably. In the Throat, the lower side of the Neck, the breast, and all the lower Belly, and the upper Legs are white feathers, wherewith underneath the Neck are feathers of an excellent colour, dispersedly intermixt. In the Belly beneath the white feathers lie black ones. The beginning of the Wings was, as I said, of an admirable rare colour, all the rest of the Wing brown, and of a shining spadicous. The Tail consists of feathers of a blue colour, like polished Steel. They make their Nests in the boughs of trees, of the bigness of a *Holland Schilling*. They lay very white Eggs, two for the most part, of an oval figure, not bigger than a *Pealc*.

2. The second sort is more beautiful than the first, of the same bigness and figure. Yet is its Bill shorter, viz. of an inch long, of the same colour and figure with that of the former. The Tongue is the same, as also the Eyes, Legs, Feet, and figure of the Wings and Tail. The colour of the feathers in the Head, upper side of the Neck, Back, Wings, and Tail like to that of the former: But in the Throat or under side of the Neck, the whole Breast, and lower Belly, to the very end of the body of so elegant and shining a green, with a golden colour, interchangeably mixt, that they glitter wonderfully. Near the Vent is a spot of a good bigness, in respect of the bulk of the bird, consisting of pure white feathers.

3. The third is lesser than all the rest. From the beginning of the Head, or insertion of the Bill to the rife of the Tail two inches and an half long: The Neck is almost one inch long: The Head not great: The Body an inch and half long. The Legs a little more than an inch long, black, round, sharp, and almost straight. The Legs and Feet like those of the rest. The feathers also of the Body and Wings are alike disposed, but differently coloured. It hath a Tail longer than any of the rest, somewhat more than three inches, consisting of feathers, of which that which is nearer to its rife is shorter, the second always longer: The Tail also is forked, and the bird flying spreads it into two large horns, so that the tips of the horns are an inch and half distant one from the other. The whole Head and Neck of this bird is of a shining filken black colour, inclining to, or interchanging with blue, as in the Necks of *Mallards*. The whole Back and Breast are green, shining interchangeably with golden and

* That is, born again.

* The word is *stigma*, which also may signify a stake, or any trancheon of wood.

and Sea-green, as in the second kind; and near the vent is also the like spot of white feathers. The Wings are of a liver-colour. The Tail is of a blackish blue, shining like polished Steel blued over.

4. The *fourth* is a little lesser than the third. The shape of the body and disposition of the feathers the same, but it is of another colour, and differs also in the Bill and colour of the Legs. The Bill is an inch and half long, bowed downward like a *Polonian* Sword, round, every where of equal thickness, and sharp-pointed. The upper part thereof is black, the under yellow, excepting the tip, which is also black. The top of the Head, the upper side of the Neck, as also the Wings, are of like colour with those of the first kind. The Throat, the lower side of the Neck, the whole Breast, and lower Belly, from white incline to a red colour. It hath a Tail an inch long, ending with the Wings, consisting of feathers which from black incline to green, having white tips: The Toes so disposed as the other *Species*, yet not black, but white or yellowish, with like femular, sharp, and black Claws.

5. The *fifth* is in bigness equal to the third kind; having a black Bill, a little more than an inch long, and a little bending downward, black Eyes, as also Legs and Feet. The Throat, lower side of the Neck, and all the Belly are covered with black Velvet feathers, having as it were a gloss of shining blue. Near the Vent is a spot of white feathers. But the black ends of the feathers on the sides of the Neck, Breast, and Belly shine wonderfully with a rare mixture of Sea-water colour, golden and green. All the upper side of the Head and Neck, and the whole Back are adorned with feathers mixt with golden, fire-colour, and green, as is also the beginning of the Wings. The rest of the Wings is of an iron or dusky colour. The Tail is a little more than an inch long, consisting of feathers of an elegant brown, with a gloss of blue. About the edges these feathers are of the colour of polished Steel blued.

6. The *sixth* is in bigness equal to the *fifth*; hath a Bill of an inch long, a little bending, white underneath, black above. The whole Head, Neck, Back, and Belly, and the beginning of the Wings are covered with feathers of an excellent shining colour, consisting as it were of a mixture of much gold, half fire-colour, and a little green: In brief, shining like the Sun. In the Belly are a few white feathers mixt. The Legs are black: The Wings blackish: The Tail almost an inch and half long, handfom and broad, consisting of some feathers of the same rare colour with the rest of the body, some of a mixt colour of green and golden, and white about the edges, some half white, half green, shining with golden, that is, on one side the shaft white, on the other green.

7. The *seventh* is a little less than the *fifth* and *sixth* kind; hath a Bill not altogether an inch long, being of an ash-colour all over the body, almost like a *Sparrow*, which here and there shineth rarely with a mixture of red like a Rubine.

8. The *eighth* is the most elegant of all, hath a straight, black Bill half an inch long; a long, double [or cloven] Tongue. Its bigness and shape agrees with that of the second kind. The whole Head above and upper part of the Neck shine with an admirable Rubine-colour, as if a Rubine were illustrated by the Sun-beams: But the Throat and under-side of the Neck do resemble pure, polished, *Hungarian* gold, shone upon by the Sun-beams: So that it is impossible in words perfectly to set forth the likeness of these colours, much less for a Painter to represent or imitate them. The beginning of the Back is covered with a Velvet black, the rest with dusky feathers, with which is mixt something of a dark green. The whole lower Belly is invested with feathers of the same colour with the back, the Wings with a dusky, as in other kinds. Near the Vent it hath a white spot. The Legs are slender and black: The Tail little more than an inch long, consisting of feathers of a * *fenilemort* colour, which at the ends are dusky about the edges. The Tail is broad, which it spreads very wide in flying. The Wings end with the Tail.

9. The *ninth* is for figure and bigness like the first. Its Bill is black above, and red underneath. Its whole body shines with that bright green colour mixt with golden, that the Belly of the second sort is of. The Wings are dusky: The Tail an inch long, pretty broad, consisting of feathers of the colour of polished blue steel.

This Bird is by the *Brasilians* called by many other names besides *Gnainumbi*, as *Aratica*, and *Arataraguacu*, as *Marggrave* tells us, and *Guaracyaba*, that is, A Sun-beam, and *Guaracigaba*, that is, the hair of the Sun, according to *de Laet*. It is common in almost all the hotter Countries of *America*. It is reported (saith *Nierembergius*) that the powder of this Bird, taken inwardly, cures the Falling sickness. What I find in *Marggravinus* concerning the Tail of the first *Species*, viz. that it consists

of four feathers, I vehemently suspect to be a mistake either of the Printer, or of the Author; for in the Tail of one that I examined I found the usual number of twelve feathers.

CHAP. XV.

Slender-billed Birds, whose Tail is particoloured.

§. I.

The Fallow-Smitch, in Suffex the Wheat-ear, because the time of Wheat-harvest they wax very fat; called by the Italians, Culo Bianco, and by us also in some places, White-tail, from the colour of its Rump. Oenanthe five Vitiiflora of Aldrovandus.

IN bigness it exceeds the *House-Sparrow*. The colour of its Head and Back is cinereous, with a certain mixture of red, like to that which is seen in the Back of the * *Hawfinch*. [The Back of a Female Bird which I described at *Florence* was cinereous, with a certain mixture of green and red.] The Rump in most is white, whence also it took its name; in some it is of the same colour with the Back, or more red. The whole Belly is white, lightly dashed with red. The Breast and Throat have a deeper tincture of red. The Belly in the Cocks is sometimes yellowish. Above the Eyes is a white line continued to the hinder part of the Head. Below the Eyes a black streak is extended from the corners of the mouth to the ears. [I found not this black line in the Females.]

Both the quill-feathers and covert-feathers of the Wings are all black besides the fringes or extreme edges, which are white, tintured with a sordid red. The Tail is two inches and a quarter long, made up of twelve feathers, of which the two middlemost have their upper half white, the rest their lower, the other half being black. Moreover, the tips and edges of them all are white. [In the Hen the white takes up but a quarter of the feathers.]

The Bill is slender, straight, black, more than half an inch long: The mouth is black within, the Tongue black and cloven: The aperture of the Mouth great: The Irides of the Eyes hazel-coloured. The back-toe is armed with a great Claw.

The Stomach is not very muculous; out of which dissected we took Beetles, and other Insects. It breeds in forsaken Coney-burroughs.

The *Suffex* Shepherds, to catch these Birds, use this Art. They dig long turves of earth, and lay them across the holes whereout they were digged, and about the middle of them hang snares made of horse-hair. The Birds, being naturally very timorous, if a Hawk happen to appear, or but a cloud pass over and intercept the Sun-beams, hastily run to hide themselves in the holes under the Turves, and so are caught by the Neck in the snares.

Upon the *Downs of Suffex*, which are a ridge of Mountains running all along by the Sea-coast for thirty or forty miles in length, they are taken yearly in great numbers, in Harvest-time, or the beginning of Autumn, where for their fatness and delicate relish they are highly prized.

Aldrovandus hath another *Oenanthe*, which is a little less than the former, but yet bigger than a *Sparrow*, on the Head, Neck, Back, and lesser Wing-feathers of a reddish yellow, deeper on the Back, lighter on the Breast, having black Eyes, behind which is also a long black spot, of a femular figure: A long, slender, black Bill; black Wing-feathers, whose ends are yellow, as are also those of the Tail-feathers. The other Oenanthe of Aldrovand.

There is also a Bird called *Strapazino* by our Fowlers (saith *Aldrovand*) in the *Bononian* Territory, whose Rump underneath, and almost the whole Tail are likewise yellow: The Head and Back of a rusty yellow: The Wing-feathers half black and half yellow; the Bill indifferent long, of a dusky colour. The Throat, Breast, and Belly are white, lightly dashed with yellow. The Tail toward the Rump is yellow, else black. The Strapazino of Aldrovand.

§. II.

The *Whin-chat*, under which also we treat of the *Anthus* or *Florus* of *Aldrovand*.

IN bigness it scarce exceeds a *Wagtail*. The upper side of the body, viz. The Back, Head, and covert-feathers of the Wings are of a pale *fenille-mort* colour, variegated with black spots, placed in rows. If you heed each single feather, the middle part of it about the shaft is black, the sides of a *fenille-mort*, or dusky yellow. The Belly is white, with a tincture of red. The sides and upper part of the Breast from red incline to yellow. The Breast in some is variegated with black spots. From the Nostrils above the Eyes to the hinder part of the Head is drawn a pale whitish line: Under the Bill also on each side is a white line. The intermediate space between these lines in some birds is black. [In one Bird of this kind I observed a white spot behind each Eye.] The quill-feathers of the Wings are brown, with yellowish edges [or of a *fenille-mort* colour.] From the ninth the tips of the eight following are white. The covert-feathers next above the quills are black, with red edges. In which two white spots do mark or characterize each Wing, one under the bastard Wing, the other at the first joint, by which note this Bird may be easily distinguished from all others of its kind: The middle quill-feathers towards the bottom are white. The Tail is two inches and an half long, consisting of twelve feathers, of all which, excepting the two middlemost, the lower half is white, the upper black, the utmost edges being red. The two middlemost in some birds are wholly black, in all for the greater part; having red or *fenille-mort* edges. They all end in sharp points. The feathers next to the incumbent on the Tail both above and beneath reach further than its middle, so that they wholly hide its white part.

Its Bill is slender, straight, short, black, not only without, but also within: The *Irides* of the Eyes hazel-coloured. The Legs slender: The Feet, Toes, and Claws black: The lower joint of the outmost Toe sticks fast to that of the middle one.

In the Female those white spots of the Wing scarce appear, and the whole body is of a duller colour. It frequents banks and ditches, feeding upon Beetles, and other Insects.

Nature sometimes sports her self in the colours of this Bird: For in some birds the two middle feathers of the Tail are wholly black excepting the edges, which are reddish; in others their bottoms are white, &c.

It differs from the following bird chiefly by these notes. 1. That the upper side of the body is more beautifully coloured, the feathers having their middle parts about the shaft black, and their borders red. 2. That in each Wing they have two white spots. 3. That the lower part of their Tails is white. 4. That the feathers immediately incumbent on the Tail both above and beneath run out as far and further than the middle of the tail, so that they wholly hide the white part thereof. 5. In the white lines reaching from the Bill to the back of the Head.

The Bird which *Aldrovand* faith is called commonly *Spipola*, which perchance may be the *Anthus* or *Florus* of *Aristotle*, is near of kinto, if not the same with this. It is often near the same bigness: Lives about Rivers and Fens, especially in moist meadows; and if it be driven away by Horses feeding there, it flies away with a certain chattering, wherein it seems after a fashion to imitate the neighing of a horse. Whether it be dim-sighted or no I know not, but I hear that it flies with difficulty. As for its colour, that is rather to be called beautiful than otherwise; on the upper side throughout the Neck, Back, and Wings being of a dusky red, and varied with femilunar spots. The Head above is of the same colour, but hath not those spots. The prime-feathers of the Wings, and those that cover them are black, having their sides and tips yellowish. The Bill is fit to catch Insects, being neither slender, nor thick, of a white colour tinged with yellow. The nether side from the Bill to the Tail is of the same colour, but variegated with spots, some long, some round, and some of another figure. Its Feet are black. This differs from our *Whin-chat* in the colour of its Bill, and in the place where it lives; for our *Chat* abides especially in heaths, and among *Furze-bushes*.

§. III.

§. III.

The *Stone-smith*, or *Stone-chatter*, or *Moor-titling*. *Oenanthus nostra tertia*: *Muscicapa tertia*, *Aldrov.* The *Rubetra* of *Bellonius* as we judge, which *Gesner* makes the same with his *Todtenvogel*, or *Flugentecherlin*.

IT is of the bigness of a *Linnet*, or thereabouts: Of half an ounce weight: From Bill-point to Tail-end five inches long. Its Bill is slender, straight, black as well within as without. The upper Chap a thought longer than the nether, and a little crooked: The Tongue cloven: the *Irides* of the Eyes hazel-coloured: The Legs, Feet, and Claws black; the outer Toe grows to the middle one below, as in other small birds. The Head is great, in the Cock almost wholly black, as is also the Throat under the Bill: In the Hen it is particoloured of black and a dirty red. The upper part of the Neck is black; on each side it is marked with a white spot, so that the bird seems to have a ring of white about its Neck. The middle of the Back is black, only the outmost edges of the feathers fulvous. Above the Rump is a white spot. The Breast is fulvous, or of a yellowish red colour: The Belly white, with a dash of red.

In the Female the feathers of the Head, Neck, and Back from red inclining to green, having their middle parts black; the Rump is red; the Chin of a pale ash-colour. It hath a whitish spot on each side the Neck: The Breast is of a deeper, but the belly of like colour with the Cocks.]

The prime feathers of the Wings are all dusky, excepting the two next to the body, which have a white spot at bottom. The edges of all are red. All the covert feathers of the Wings have also red edges. The Wings in both Sexes are adorned with a white spot in the feathers next the Back. The Tail is near two inches long, and consists of twelve feathers, not forked, and black. [The tip and exterior Web of the outmost feather on each side are white.]

It hath a Gall-bladder; a Stomach not very fleshy, in which dissected we found Beetles, and other Insects; short, round, tumid blind Guts.

That which I [J. R.] described at *Flourence* differed somewhat in colours, and other accidents; thus: It was of the bigness of a lesser *Titmouse*: Its Body short and round: Its Head, for the proportion of its body, great. The top of the Head, the Neck, and Back particoloured of black and a dirty red, the middle part of each feather being black, and the edges red. The quill-feathers are eighteen, all dusky, their exterior edges being of a *fenille-mort* colour. Of the feathers of the second row those five on the middle joint are black, with *fenille-mort* edges, the rest are of the same colour with the quill-feathers. The lesser rows are of like colour with the foresaid five middle feathers. The Tail-feathers are all black, only their edges are paler. The Cock is black about both Eyes, and under the Throat, the tips of the feathers being white. The Breast and parts under the Wings in both Sexes are fulvous or red; the middle of the Belly being whiter. The feathers of this bird are soft, and stand ruffling out, as in a Jay. In all other points it agrees with the above described, so that I doubt not but it is the same.

The third and fourth *Muscicape* of *Aldrovand* differ not, I think, from this, nor from one another otherwise than in colour.

It is found for the most part in Heaths, and is very querulous.

§. IV.

* The *Brazilian* Guiraru Nheengeta of *Marggrave*, which may be called, The *American Chat*.

IT is as big, or a little bigger than a *Water-Blackbird*, or *Crake*; hath a straight, compressed, black Bill, more than half an inch long: Sapphire-coloured Eyes, with a black Pupil. The *upper Legs are covered with ash-coloured feathers: The lower *Others call them the with a black skin, as are also the Feet, which have four Toes standing after the usual Thighs. manner, with sharp, black Claws. The whole Head, Neck, Breast, and lower Belly are clothed with white feathers approaching to a dilute grey; but the Back with cinereous. From the Bill on each side through the Eyes to the end of the sides of the Head is a long black spot extended. The Wings are black, but not of a deep colour.

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The Tail hath very black feathers, which yet have white tips; and above also are covered with white ones. This for its bigness ought rather to have been referred to the *Thrush-kind*.

§. V.

A Bird called Goldfinch by the Germans.

THIS Bird was shot by Mr. *Jessop* in the Mountains of the *Peak* in *Derbyshire*, and sent us by him. Its Belly is white; its Breast of a dusky yellow: The Head and Back of a dusky or greenish ash-colour: The covert-feathers of the Tail black. The quill-feathers of the Wings likewise black; but from the fifth they are all white toward the bottoms, whence arises a white spot or streak cross the Wing, from a narrow beginning widening by degrees, so that in the last feathers it takes up all the exterior Vanes; but where it is broader, it is gradually tintured with yellow. The second row of Wing-feathers is black, with whitish tips: The edges of the rest of the coverts are green. The Tail is two inches and a quarter long. Its outmost feathers have their exterior Webs almost wholly white; in the next to them the white part is narrower: All the rest are black, but the middlemost deeper.

Its Bill is black, compressed, and almost triangular. The Tongue cloven and rough: The *Irides* of the Eyes of a hazel-colour. The Feet black; The outmost Toe joined to the middlemost, as in other small birds. The Testicles small and round. In the Stomach we found Insects.

This excellent person sent us also out of the *Peak* of *Derbyshire* the third *Beccafico* of *Aldrovand*, which I suppose differs only in age or Sex from the precedent. The Throat, Breast, and Belly are much whiter than in that. All the exterior Webs of the outmost feathers of the Tail are white, of those next to them the lower half. This hath a great white spot in each Wing, altogether like the precedent: Above the Bill also it hath a white spot: The Back else is coal-black. In its fashion, bigness, Bill, and Tail it agrees with the *Coldfinch*.

The *Ficedula* tertius of *Aldrovand*.

CHAP. XVI.

The White-throat. An Spipola prima Aldrov.

THE body of this Bird seems to be something longer than that of the *Beccafico* before described; but of almost the same magnitude. From the tip of the Bill to the end of the Tail, or of the Feet, (for they are equally extended) it hath six inches and a quarter of length: Between the extreme points of the Wings spread eight and an half of breadth. The upper Bill is black, the lower white. The Tongue slit with a deep incision. The Mouth within yellow: The *Irides* of the Eyes hazel-coloured. The Feet are of a dusky yellow or Amber-colour: The back-toe great; the exterior foretoes equal, and less than in other small birds, joined at bottom to the middlemost, the interior by an intervening membrane, which we have not observed in other Birds of this kind. The upper surface of the body from red inclines to an ash-colour. The Head more cinereous: The Chin white, the rest of the Throat white, with a tincture of red. The Breast also and lower Belly are something red. [In the Hen the Breast is white, without any mixture of red.]

The outmost edge of the first or outmost quill-feather is white: The exterior edges of those next the body are red. The extreme feathers of the Tail on each side have all their exterior Webs, and half their interior white: Of the next to these the tips only are white. All the rest are black, only the extreme borders or edges, especially of the two middlemost, incline to cinereous.

It frequents Gardens, and feeds upon Beetles, Flies, and other Insects: Creeping and hopping up and down in bushes, like the *Hedge-Sparrow*. It builds also in bulrushes not far from the ground. The outer part of the Nest is made of the tender stalks of herbs and dry straws; the middlemost of fine bents and soft grass; the inner, on which the Eggs lie, of horse-hair, or other long hair. It lays about five Eggs, oblong, of a dusky colour, mingled of white and green, besprinkled over with black specks.

This

This Bird is very like the *Ficedula* above described, yet differs in some particulars, especially that the outmost feathers of the Tail in this are white; whereas in that the Tail is all of one colour.

Among the doubtful birds of this kind, at least to us not sufficiently known, we reckon, 1. The small *Nightingale*, *Luscinola* or *Rouffette* of *Bellonius*, which you may find in *Aldrovand*, tom. 2. pag. 767. perchance the same with the *Giarola* of *Aldrovand*, having a red Bill, and the colour of the body like a *Quail*. 2. *Oenanthe* congener, *Aldrov.* tom. 2. p. 764. 3. The other *Spipola* of *Aldrovand*, tom. 2. p. 731. the description whereof we have already set down, * p. 153. which perchance may be the same with our *Spipoletta*, or with our *Whin-chat*, p. 168. 4. *Spipola tertius* or *Boarina* of *Aldrovand*, p. 732. which we have already entred the description of, p. 153. 5. The *Stoparola* of *Aldrovand*, p. 732, which you may find also in pag. 153. of this work. 6. *Boarina* of *Aldrovand*, p. 733. whose description we have subjoined to the *Ficedula*, p. 158. 7. *Grisola*, which we have annexed to our *Spipoletta*, pag. 153. 8. *Anthus* or *Florus*, which we have remembered in our Chapter of *Oenanthe*, pag. 169.

These, and some other birds, comprehended by *Aldrovandus* in three Chapters, viz. twenty sixth, twenty seventh, and twenty eighth of the seventeenth Book, under the titles of *Spipola*, *Stoparole*, and *Muscicape*, seem to us reducible to three or four Species, viz. to the *White-throat*, or *Moncherolle* or *Passer rubi*, (for *Bellonius* his *Moncherolle* is perchance another sort of bird) and the *Beccafico* or *Black-cap*.

CHAP. XVII.

The Water-Wagtail; Motacilla, in Greek Σαυωπις.

§. I.

The white Wagtail: Motacilla alba.

THIS Bird is every where so well known, that it may seem enough to name it, not needing any description. It weighs six drachms, being in length from the point of the Bill to the end of the Tail seven inches three quarters; in breadth between the extremities of the Wings stretch out eleven. The Bill is slender, not an inch long, sharp-pointed, and black. The Tongue cloven, and as it were torn: The Mouth within black: The *Irides* of the Eyes hazel-coloured: The Feet, Toes, and Claws long, and of a dark blackish colour. The back-claw very long, as in *Larks*. The outer Toe at its rise sticks fast to the middle one. White feathers encompass the upper Chap of the Bill, then the Eyes, being produced on both sides almost to the Wings. The Crown of the Head, upper and lower side of the Neck, as far as the Breast, and the Back are black: The Breast and Belly white. The middle of the Back from black inclines to cinereous: The Rump is black. [In another Bird, below the Throat I observed a femicircular black spot like a Crescent, the horns being produced almost as far as the Jaws.] The Wings spread are of a femicircular figure; the quill-feathers in each eighteen in number, of which the three outmost end in sharp points: The tips of the middle ones are blunt and indented; the inmost are adorned with white lines. The covert feathers of the first row are black, having their tips and edges white: Those of the second row have only white tips. Its Tail is very long, of about three inches and an half, which it almost continually wags up and down, whence also it took its name. The Tail hath twelve feathers, of which the two middlemost are longer than the rest, and sharp-pointed; the others all of equal length: The outmost are almost wholly white, the rest black. The colour of the Plumage in this kind in several birds varies not a little, being in some more cinereous, in some blacker. The Liver is of a pale colour.

It is much conversant about the brinks of Rivers, and Pools, and other watry places, where it catches Flies, and water Insects: Moreover it follows the Plough, to gather up the Worms, which together with the earth it turns up: As I find in *Aldrovandus*, and our Husbandmen have told me of their own observation; who therefore call it the *Seed-bird*, as Mr. *Johnson* informed me.

In the Northern part of *England* it appears not in the Winter, and is also then more rare

rare in the Southern: Either because it is impatient of cold, or for want of meat; Flies, and other winged Insects, on which it chiefly feeds, being not to be found in Winter-time. In the Gizzard of one dissected we found Insects like to *Meal-worms*. *Gesner* writes, that the Fowlers in his Country have observed the *Cuckoo-chicken* hatch'd and brought up by this bird: The same, *Albertus*, and our experience also confirms, as we have * elsewhere shewn.

* In the Chapter of the Cuckoo.

One or two ounces of the powder of this Bird put in a Pot close-stopt and bak'd in an Oven together with the feathers, taken in *Saxifrage* water, or strong White-wine is said to be good against the Stone, especially that of the Kidneys. But *Alexander Benedictus* thinks, that the modern Physicians, who commend this Medicine through mistake, mean the *Wren* when they name the *Wagtail*: As if the *Wagtail* were of no force in breaking the Stone. *Gesner* (to whom also we readily assent) thinks that it matters not much what bird be burnt, sith the virtue of the ashes of almost all birds seem to be the same. Yet (saith he) if there be any difference, I would prefer those sorts of birds which feed upon Insects, as Flies, Ants, and the like.

§. II.

The yellow Water-Wagtail: Motacilla flava.

IN bigness and shape of body it agrees with the white. It weighs five drachms; from the tip of the Bill to the end of the Tail being almost seven inches long; to the end of the Claws six. The under part of the Body is yellow, the Breast being darker than the rest. The upper part is of a dark green, the middle of the Back being black. The crown of the Head is of a yellowish green. Above the Eyes is a yellow line reaching to the hinder part of the Head.

The Tail is two inches three quarters long, consisting of twelve feathers, the middle two whereof are sharper than the rest. The outmolt on each side are above half white, the intermediate eight black: All of equal length. The figure of the Wings is the same with that of the precedent. The quill-feathers in number eighteen; of which the sixteenth is longer than those next it, and hath the outward limb white. The tips of the middle covert-feathers are of a greenish white; else the Wings are all over dusky. The Bill is black: The Tongue cloven, but not hairy. The *Irides* of the Eyes from cinereous incline to a hazel-colour. The Feet are black: The outer fore-toe is joyned to the middle one at bottom. The Spur or Claw of the back-toe is long as in a *Lark*: The blind guts short. Some birds in this kind are much yellower or greener than others.

It builds upon the ground among the Corn; making its Nest of bents and the stalks of herbs, spreading hairs within under the Eggs. It lays at one time four or five Eggs, varied with dusky spots and lines drawn without any order.

§. III.

The grey Wagtail. Motacilla cinerea, an flava altera Aldrov?

IT is of the bigness of the common or white *Wagtail*. Its note is shriller and louder: Its Bill black, straight, slender, and sharp-pointed: Its Eyes grey: Both upper and lower Eye-lid white. Moreover, above the Eyes a whitish line is all along extended. The upper surface of the body is grey. The Head (which in proportion to the body is small and compressed) is something dusky. The Wings are blackish, crossed in the middle by a whitish, yet not very conspicuous line. The Chin and Throat are particoloured of white and grey: The Breast and Belly white, dashed with yellow: The Rump round about of a deeper yellow. The Tail made up of twelve feathers, longer than the whole body; its outmolt feather on each side is all over white; the two next white on the inside, blackish on the out; the six middle-molt all over blackish. The Legs (which are long) and the Feet (which are rugged or rough) are of a pale colour, but dusky. The Claws crooked, and the back-claw longer than the rest.

The bird here described was a Hen, as we learned by its *Vitellary* or bunch of Eggs, wherein more than forty Eggs were very conspicuous and easie to be discerned. The Cock differs little, save that under his Chin he hath a black spot. They frequent stony Rivers, and feed upon water-Insects:

The

The description of this Bird was communicated to us by Mr. *Johnson* of *Brignall* near *Greta* Bridge in *Yorkshire*.

CHAP. XVIII.

* *The Brazilian Jamacaii of Marggrave.*

IT is a small Bird, of the bigness of a *Lark*. Its Body is three inches long, its Neck more than an inch, its Legs two inches: Its Tail almost four. It hath a small Head; a Bill an inch long, straight, only a little bending downward, sharp-pointed; black, but below near its rife a little bluish. The Head is covered with black feathers, as is also the Neck below, but above with yellow: The whole Back, Breast, and lower Belly likewise with yellow. The Wings are black, having in their middle some white feathers, which make white spots, in each Wing one. At the rife of the Wings is a black spot crossing the back. The Tail is also black: The Legs and Feet dusky. It is an elegant bird.

For the length of the Tail and colours of the feathers not much different, we have subjoyned this to the *Wagtails*, although *Marggrave* makes no mention of the manner of its feeding, or the places it frequents: Or whether it moves its Tail or not.

CHAP. XIX.

* *The Brazilian Guira guacuberaba of Marggrave*

IS a Bird of the bigness of a *Goldfinch*. The lower part of the Neck, the Back, and end of the Belly are of a yellow or gold colour. The upper part of the Head and Neck, the fore-half of the Back, the Wings, and Tail are of a pale green. In the ends of the Wings are some dusky feathers intermixed. Under the Throat up to the Eyes it hath a great black spot. It hath a straight, sharp, yellow Bill, a little black on the upper part. The Legs and Feet are of a dusky colour.

CHAP. XX.

* *The Brazilian Guira coereba of Marggrave*

IS a Bird of the bigness of a *Chaffinch*. It hath a black Bill, three quarters of an inch long, sharp, and a little bending downward: Black Eyes: A Tongue slit into many filaments, on the top of the Head a cop or tuft of Sea-green feathers. The rest of the Head, the Throat, and all the lower Neck, the Breast, and whole Belly, with the hinder half of the Back are covered with blue, but pale feathers: And from the Breast through the beginnings of the Wings to the Back, where the blue colour begins, passes a broad blue line cross through the rife of the Wings. All the upper side of the Neck, with the fore-half of the Back is covered with fine Velvet feathers of a deep black. The Tail is an inch and half long, and black. The Wings are great, and yellow about the middle. But the yellow part is covered, and cannot be seen when the Wings are closed, and the Bird sits still, but when she flies the Wings appear elegantly streaked with black and yellow: Within side the Wings are almost wholly yellow. The upper Legs or Thighs are feathered with black, and in a manner blue feathers: The lower are naked, and of a Vermilion colour, together with the Feet; the Claws black. The Feet have four Toes disposed after the usual manner.

CHAP.

CHAP. XXI.

* *The Braslian Japacani of Marggrave,*

IS a Bird of the bigness of the *Bemere* or *Schanepue*: Hath a black, oblong, sharp-pointed Bill, bending a little downward: Golden Eyes, with a black Pupil. The Head is covered with black feathers. The Neck above, the Back and Wings with feathers of a colour mixt of black and Umber. The Tail above is black, underneath spotted with white. The Breast, all the lower Belly and Thighs have their Plumage mixt of white and yellow, interwoven with transverse black lines or strakes. The Legs are dusky. Four Toes in each placed after the usual manner, furnished with sharp, black Claws.

CHAP. XXII.

Of *Titmice*: De Paris.

§. I.

Of *Titmice* in general.

TITMICE are a sort of small birds, that are found for the most part about trees, and live chiefly upon Insects which they find there. Turner writes, that they feed not only upon Worms, but also Hemp-seed and Nuts, which they perforate with their sharp Bills. Some of these build in holes of trees: Others make Nests of an Oval figure, with a hole left open in the side to go in and out at. They are restless birds, never sitting long still in a place, but flitting from bough to bough, and from tree to tree. They have short Bills, but bigger for the bulk of their bodies than the precedent small birds: Small bodies, and long Tails. The most of them are canorous: But all of them multiparous, laying many Eggs ere they sit. *Titmice* are called by *Aristotle*, 'Αρσιδαλοι. The *Germans*, as well as we *English*, call them *Mice*, either because like *Mice* they creep into the holes of trees, or because (as *Gesner* writes) they will feed upon fluid *Mice* offered them: Which to us seems not likely. Of these we have observed in *England* five kinds, viz. 1. The great *Titmouse*, or *Ox-eye*. 2. The *Colemouse*. 3. The *Marsh-Titmouse* or *Black-cap*. 4. The blue *Titmouse* or *Nun*. 5. The *long-tail'd-Titmouse*. The crested *Titmouse* and *Wood Titmouse* of *Gesner*, we have not yet found in *England*.

§. II.

The great *Titmouse* or *Ox-eye*: *Fringillago* seu *parus* major: 'Αρσιδαλος
μεγιστος of *Aristotle*.

IT is well nigh as big as a *Chaffinch*: Of scarce an ounce weight: From tip of Bill to end of Tail half a foot long; from tip to tip of the Wings expanded nine inches broad. Its Bill is straight, black, half an inch long, and of a moderate thickness. Both Mandibles of equal length. The Tongue broad, ending in four filaments. The Feet of a lead or blue colour. The outmost Toes below for some space joyned to the middlemost.

The Head and Chin are black. From the corner of the mouth on each side below the Eyes a broad white line or spot passing backward takes up the cheeks. This white is encompassed with black. In the hinder part of the Head is another white spot, terminated on one side with the black of the Head, on the other with the yellow of the Neck. [In the Bird that I (J. R.) described I observed not this spot, and perchance in several birds the colours may vary somewhat.] The Neck, Shoulders, and middle of the Back are of a yellowish green. The Rump is blue: The Breast, Belly, and Thighs are yellow: Yet the lower or hindmost part of the Belly white. A broad, black line reaching from the Throat to the Vent divides the Breast and Belly in twain.

twain. The quill-feathers of the Wings, in number eighteen, beside the outmost little one, are dusky, with white tips, or tips partly white, partly blue. The outer edges of those three next the body are green. Of the covert feathers of the first row, those that are about the middle of the Wing, with their white tips make a transverse white line. The smaller covert-feathers of the Wings are blue. The Tail is about two inches and an half long, compounded of twelve feathers: The exterior Vanes of all which, except the outmost, are blue or ash-coloured, the interior black. The outmost have their exterior Vanes and their tips white; The Tail appears not forked; no not when it is closed.

§. III.

* *The Braslian Guiraienoia, akin to the Fringillago.*

THis small bird is of the bigness of a *Chaffinch*: Hath a Bill scarce half an inch long, and blackish; black Eyes. The whole head, lower side of the Neck, Breast, and lower Belly, and utmost half of the Back are clothed with blue feathers: The upper side of the Neck, and fore-half of the Back are covered with black. The Wings also are black, but in their beginning have some blue feathers interperfed: The rest of the feathers are black, yet have blue edges. The Tail is almost an inch and half long, and also black, and the Wings end a little beyond the beginning of the Tail. The Legs are dusky, and each foot hath four toes placed after the usual manner.

§. IV.

The Cole-mouse: *Parus ater* *Gesneri*, pag. 616.

THE Head is by *Gesner* rightly described to be black, with a white spot in the hinder part. The Back is of a greenish ash-colour: The Rump greener: The Wings and Tail dusky. The exterior edges of the prime Wing-feathers green. The interior covert-feathers of the Wings have white tips. The Tail, when shut, appears something forked, from dusky inclining to green. The Bill is straight, round, black. The Legs, Feet, and Claws bluish, or of a lead-colour. This is the least of all this kind. By its smallness were other notes wanting, it is abundantly distinguished from the great *Titmouse*.

It weighs two drachms, being from Bill-point to Tail-end four inches three quarters long, and between the extremities of the Wings extended seven inches broad. The number of quill-feathers in each Wing is eighteen. The Tail is an inch and three quarters long, and composed of twelve feathers.

§. V.

The Marsh Titmouse or Black-cap: *Parus palustris* *Gesneri*.

THE Head of this is black: The cheeks white; the back greenish: The Feet of a Lead-colour. It differs from that next above described, 1. In that it is bigger. 2. That it hath a larger Tail. 3. That it wants the white spot on the back of the Head. 4. That its under side is whiter. 5. That it hath less black under the Chin. 6. That it wants those white spots in the tips of the covert-feathers of the Wings.

It weighs more than three drachms. From the point of the Bill to the end of the Claws it is by measure four inches and an half long. The distance between the extreme tips of the Wings extended is eight inches. The number of Wing and Tail-feathers is the same as in other small birds. The Tail is more than two inches long, composed of feathers of equal length.

Gesner makes the Back of this bird dusky inclining to cinereous.

§. VI.

The blue Titmouse or Nun: Parus caeruleus.

The Bill of this Bird is pretty short, thick, sharp, and of a dusky blackish colour: The Tongue broad, ending in four filaments: The Legs of a lead-colour: The outmost Toes at bottom are fastened to the middle ones.

The Head being of an azure colour is encompassed with a circle of white as it were a Wreath or Coronet. To the white circle succeeds another particoloured, encompassing the Throat and hinder part of the Head, above being almost of the same colour with the Head, towards the Throat and under the Throat black. Below this circle on the Neck is a white spot. From the Bill a black line passes through the Eyes to the hinder part of the Head. The Cheeks are white: The Back is of a yellowish green. The sides, Breast, and Belly yellow; save that a whitish line produced as far as the Vent divides the Breast in two. In the Cock-bird the Head is more blue, in the Hen and young ones less.

The tips of the quill-feathers next the body are white, as also the outer edges of the foremost from the middle part upward. The covert-feathers of the Wings are blue, the innermost of which with their white tips make a white line cross the Wing. The Tail is two inches long, of a blue colour, only the edges of the outmost feathers are a little white.

Its weight is three drachms: Its length from Bill-point to Tail-end four inches and an half; to the Claws four: Its breadth, the Wings extended, eight inches. The quill-feathers in each Wing eighteen, besides the outmost short one: The Tail-feathers twelve.

§. VII.

The crested Titmouse; Parus cristatus Aldrov.

This hath a pretty short big Bill, of a blackish colour. Its Tongue is broad, and divided into four filaments. Its Feet of a lead-colour. The outer Toes for some space from their divarication joined to the middle one. The crown of the Head black, the edges of the feathers being white. At the hinder part of the Head begins a black line, which like a Wreath or Collar encompasses the Neck. From the lower Mandible of the Bill to this Collar is a black line produced. To the Collar and Chin is another bed or border of white contiguous. But beyond the Ears is a spot of black. The middle of the Breast is white; the sides something red. The Wings and Tail are dusky, only the exterior edges of the feathers somewhat green. The Back from red inclining to green.

It weighs two drachms and an half: Is from the tip of the Bill to the end of the Tail five inches long: From tip to tip of the Wings extended eight inches and a quarter broad. The quill-feathers of the Wings are eighteen in number, the Tail-feathers twelve. The Tail two inches long. The Bill from the tip to the corners of the mouth half an inch.

§. VIII.

The long-tail'd Titmouse. Parus caudatus.

The crown of this Bird is white: The Neck black. From the Bill above the Eyes on each side to the hinder-part of the Head is a broad black line produced. The Jaws and Throat are white. The Breast white, varied with small dusky spots. The Belly and sides of a dilute Chestnut colour: Of which, but mixt with black, both the Back and also the Rump partake.

The quill-feathers of the Wings are of an obscure dusky colour, the outer edges of the interior of these are white. The singular structure or conformation of the feathers of the Tail difference this Bird from all other small birds of what kind soever. For the outmost feathers are the shortest, the rest in order longer to the middlemost, which are the longest, and that by a notable difference or excess, as in the Magpie. Of the outmost feather on each side the top and outer half from the shaft is white:

white: The next hath less white; of the third, only the outer part of the tip is white. All the rest are wholly black. [In respect of these colours there may possibly be some variety in several birds.]

The Bill is short, strong, black: The Tongue broad, cloven, and divided into filaments: The Eyes bigger than in other small birds; their Irides hazel-coloured: The edges of the eye-lids yellow: The Nostrils covered with small feathers. The Feet black, as are also the Claws, but deeper. The Claw of the back-toe biggest of all, as is usual in most birds both great and small. With us it frequents gardens rather than mountainous places. It builds like the Wren, or more artificially, making an arch over the Nest of the same matter and contexture with the rest of the Nest; so that the Nest resembles an Egg erected upon one end, a small hole being left in the side, whereat the bird goes in and out. By this means both Eggs and Young are secured from all injuries of the Air, Wind, Rain, Cold, &c. And that they may lie fast the lines the Nest within with store of feathers and down. Without the builds the sides and roof of it of Moss and Wool curiously interwoven.

Aldrovand in the seventeenth Book, and sixteenth Chapter of his *Ornithology* doth accurately describe the Nest of this bird, such as we have more than once seen, in these words. It was of an oblong figure like a Pine-apple, of two Palms length, and one broad, round, built of sundry materials, viz. both tree and earth-moss, Caterpillars Webs, and other like woolly matter, and Hens feathers, with that order and art, that the chief and middle strength of the work, or texture of the Walls was of that yellowish green Moss, the common hairy Moss, that silk-like matter, and tough threads resembling those filaments suspended in the Air, and flying up and down like Spiders Webs, which are accounted signs of fair weather, connected and interwoven, or rather entangled so firmly together, that they can hardly be plucked asunder. Of the interior capacity all the sides, it seemed, as well as the bottom, were covered and lined with feathers, for the more soft and warm lying of the Young. The outmost superficies round about was fenced and strengthened with fragments of that leavy Moss, which every where grows on trees, firmly bound together. In the forefront respecting the Sun-rise, and that above (where an arched roof of the same uniform matter and texture with the sides and bottom covered the Nest) was seen a little hole, scarce big enough one would think to admit the old one. We found in it nine Young, &c.

§. IX.

The Wood Titmouse of Gesner. Parus Sylvaticus, Aldrov. l. 2. p. 724.

This *Titmouse* is also very little, remarkable for a red spot through the midst of its Crown; the parts on each side being black; the Legs dusky; the Wings black, and also the end of the Tail: The rest of the body green; the Belly paler. Our people from the Woods, in which it lives, especially about Fir-trees and Junipers, call it, *Waldmeiszele* and *Thannenmeiszele*, others from its note *Zitzelperle*, for it sings *Zul, zil, zalp*.

Mr. *Willughby* was apt to think that the bird described by *Gesner* is no other than the *Regulus cristatus*.

CHAP. XXIII. §. I.

* *The Brazilian Tangara of Marggrave.*

IT is an elegant bird, of the bigness of a *Chaffinch*. It hath a straight, pretty thick, black Bill: Black Eyes: Legs and Feet from cinereous inclining to dusky. On the forehead above the rise of the Bill it hath a spot of black feathers. The whole Head and Neck are covered with feathers of a shining Sea-green. A circle or border of black feathers encompasses the beginning of the back like a Collar. But below the Wings to the rise of the Tail the Back is covered with yellow feathers. * The word is rather to be rendered untremities blue, so that when closed they appear wholly black. The beginning of the Wings der the Wings outfides, or borders [tota extremitas] seem black. The beginning of the Wings der the Wings

also * externally shines with Sea-green feathers; and in the ridge or upper lateral extremity of each Wing are yellow feathers intermixt. It hath a Tail about an inch and half long, of black feathers, but whose lateral extremities or borders are blue: The end of the Tail is black. It is kept shut up in Cages, and cries, *Zip, zip*, like the *Rubrica*, called by the Germans *Gymel*. It is fed with meal and bread.

This description is conceived in such obscure words, that I do not well understand the meaning of the Author; and therefore the learned Reader would do well to consult the *Latine*.

§. II.

The second kind of *Tangara*.

* Of a dusky yellow.

† The word is *minium*, which signifies red lead.

It is of the shape and bigness of our common *Sparrow*: Hath a Bill from *yellow inclining to dusky, somewhat broad, sharp-pointed, the nether Chap much shorter than the upper: Black Eyes: The whole Head is covered with feathers of a rare † scarlet colour: All the rest of the body, with the Wings and Tail, of a shining black. The Thighs are covered with white feathers, and in their exterior sides have an oblong scarlet spot, as if they were stained with blood. The Legs and Feet are ash-coloured; and have four Toes disposed after the usual manner. The Tail is short, of an inch length, and the Wings end near its rise; i.e. when withdrawn or closed reach no further than the rise of the Tail.

BOOK II. PART II. SECT. II. MEMB. II.

Small Birds with thick short strong Bills, commonly called Hard-bill'd Birds.

CHAP. I.

Of the Gros-beak or Haw-finch, called by Gesner, Coccothraustes.

§. I.

The common Gros-beak: *Coccothraustes vulgaris*.

THIS Bird for the bigness of its body, but especially of its Bill, in which it exceeds all others of this kind, doth justly challenge the first and chief place among thick-billed birds. The French from the bigness of its Bill do fitly call it *Grosbec*; the Italians, *Frisone* or *Frosone*. *Hesychius* and *Varinus* of the word *Κοκκοθραυστις* write only, that it is the name of a bird, but what manner of bird they do not explain. Gesner observing that name exactly to fit this bird, imposed it upon it.

It is bigger than a *Chaffinch* by about one third part; short-bodied: Its Head bigger than for the proportion of the body. Its Bill very great, hard, from a broad base ending in a sharp point, of the figure of a Cone or Funnel, half an inch long, having a large cavity within, of a whitish flesh-colour, almost like that of the interior surface of the mother of Pearl shell, only the tip blackish. The Eyes are grey or ash-coloured, as in *Jackdaws*. The Tongue seems as it were cut off, as in the *Chaffinch*. The Feet are of a pale red: The Claws great, especially those of the middle and back-toes. The middle Toe is the longest; the outer fore-toe and the back-toe are equal one to the other.

At the base of the Bill grow Orange-coloured feathers, between the Bill and the Eyes black. The lower Chap in the Males is compassed with a border of black feathers. The head is of a yellowish red, or rusty colour: The Neck cinereous. The Back red, the middle parts of the feathers being whitish. The Rump from yellow inclines

inclines to cinereous. The sides and Breast, but especially the sides, are of a mixt colour of red and cinereous. Under the Tail, and in the middle of the Belly the Plumage is whiter. [In another bird the Back was of a grey or ash-colour, tinged with red: The Head and Throat greenish: The sides and Breast painted with transverse black lines.]

The quill-feathers in each Wing are eighteen in number, of which the nine or ten foremost for half way from the shaft inward are white. The white part from the first inward being dilated. Of the subsequent one half is white, but not so far as the shaft: The three inmost or next the body are red. The tips of all from the second to the tenth shine with a changeable colour of purplish and blue, like the Necks of Pigeons. From the tenth the exterior borders of the sixth or seventh succeeding are grey, else they are all dusky. The Tail is but short, of about two inches length, composed of twelve feathers, spotted at the top on their interior Vanes with white, on their exterior in the middle feathers with red, in the outer with black. [In another bird the middle feathers of the Tail were greenish.]

About *Frankfurt* on the *Main*, and elsewhere in *Germany*, and in *Italy*, it is common. In Summer time it lives in the Woods and Mountains; in the Winter it comes down into the Plains. It seldom comes over to us in *England*, viz. only in hard Winters. It breaks the stones of Cherries, and even of Olives with expedition, the Kernels whereof it is very greedy of. The Stomach of one we dissected in the Month of December was full of the stones of *Holly-berries*. It feeds also upon Hemp-seed, *Panic*, &c. and moreover upon the buds of trees, like the *Bullfinch*.

It is said to build in the holes of trees, and to lay five or six Eggs. It weighs an ounce and three quarters: Is in length from Bill to Claws seven inches and an half; in breadth between the tips of the Wings extended twelve and an half.

§. II.

The *Virginian Nightingale*: *Coccothraustes Indica cristata*.

IT is as big as a *Blackbird*, or something less. A black border compasses the Eyes and Bill; which is like to that of the common *Hawfinch*, or a little shorter. The Head is adorned with a towring crest, which it often moves as well toward the Bill, as toward the Tail. The colour of the whole is a lovely Scarlet, in the Head and Tail more dilute. It is brought into *England* out of *Virginia*; whence, and from its rare singing, it is called, The *Virginian Nightingale*.

Of this Bird *Aldrovandus* writes thus: In its native Soil, viz. in the Islands of *Capo Verde*, it is commonly called *Fruso*, a name very like to our Italian *Frisone*, [i.e. *Coccothraustes vulgaris*] to which also it is very like in the Bill. Moreover, a black line or border encompasses its Bill; and it is (as *Hieronimus Mercurialis* witnesses) of the bigness of a *Thrush*. Wherefore also we thought fit to call it *Coccothraustes Indica*. It greedily devours Almonds, in which also it agrees with the *Grosbeak*, which with its Bill cracks such kind of fruits, and other Grains or stones; whence it is called *Nuci-fraga* or *Nut-cracker*. And that this Bird doth the like it is very probable, seeing it is likewise armed with a very thick and strong Bill. *Mercurialis* affirms, that by the *Portugues* it is commonly called, The *Cardinal bird*, because it is of a scarlet [purple] colour, and seems to wear on its Head a red hat. Of the nature and qualities of this Bird *Fr. Malochius*, Prefect of the Physic-garden at *Pisa*, gave me this account. It imitates the notes of birds, especially the *Nightingale*: it is greedy of *Panic* and *Almonds*, devours *Chickweed*; seeing its Image in a glass it hath many strange gesticulations, making a hissing noise, lowering its crest, setting up its Tail after the manner of the *Peacock*, shaking its Wings, in fine striking at the Looking-glass with its Bill. The temper of its body is very hot, which thence appears that it often immerges it self in water. It is of a very gentle nature, and will take meat out of ones hand. Its shape is as followeth. It hath a tuft on its Head of a triangular figure, and scarlet colour, with which colour also the Neck, Breast, and Belly are adorned. The ends of the Wings are not of so deep a scarlet, as neither the Tail, which for the proportion of the body is pretty long, of about a Palm, something erected, as broad as ones little finger. The Legs are short and whitish: The Claws strong, and something crooked. The whole bird measured from Head to Tail is full two Palms long.

CHAP. II.

X The Green-finch : *Chloris*, *Aldrov. Ornithol. lib. 18. cap. 18.*

IT is bigger than a *House-Sparrow*; of an ounce and $\frac{1}{2}$ weight; of six inches and an half length, measuring from Bill-point to the Feet or Tails end: of ten inches and an half breadth between the extreme terms of the Wings expanded. It is called by some the *Green Linnet*.

Its Bill is like that of the *Grosbeak*, but much less, of half an inch length, sharp-pointed, and not crooked: The upper Mandible dusky, the nether all whitish. The Tongue is sharp, and as it were cut off, ending in filaments: The Eyes furnished with nictating membranes: The Nostrils round, situate in the upper part of the Bill next the Head: The Feet of a flesh-colour; the Claws dusky. The outer Toe at bottom sticks fast to the middle one.

The Head and Back are green, the edges of the feathers being grey. The middle of the Back hath something of a Chestnut colour intermingled. The Rump is of a deeper green or yellow: The Belly white: The Breast of a yellowish green: The Throat of the same colour with the Neck: The feathers contiguous to the Bill are of a deep yellowish green.

The borders of the outmost quill-feathers of the Wings are yellow, of the middlemost green, of the inmost grey. The inner feathers of the second row are grey, the outer green. All the rest of the covert-feathers of the Wings are green. The feathers along the base or (if you please) ridge of the Wing are of a lovely yellow. The coverts also of the underfides of the Wings are yellow. The Tail is two inches and a quarter long, made up of twelve feathers; of which the two middlemost are all over black, those next have their outer edges yellow: The remaining four on each side from the middle outwardly are black, but all their inner Webs from top to bottom yellow.

The Liver is divided into two Lobes, and hath a Gall-bladder annexed. The bird we dissected had a large Craw, a muculous stomach, filled with seeds of Plants.

It builds in hedges: The outmost part of its Nest is made of hay, grals, or stubble; the middle of Moss; the inmost, on which the Eggs lie, of feathers, wool, and hair. In this Nest it lays five or six Eggs, near an inch long, of a pale green colour, sprinkled with sanguine spots, especially at the blunt end.

The colours of the Hen are more languid, not so bright and lively: And on the Breast and Back it hath oblong dusky spots.

The *Chloris* of *Aldrovandus*, according to his description, seems to be less green than ours. It feeds upon the seed of *Rape*, *Thistle*, *Docks*, and most willingly *Canary-grass*, as do other birds of this kind.

The *Anthus* or *Florus* of *Bezonius*, called in *French*, *Bruant*, is of kin to this. He describes it thus: *Le Bruant* in *French* hath its name from its voice: For when it sings it expresses the word *Bruire*. As it flies it makes a noise. *Aristotle* calls it $\alpha\lambda\theta\sigma$, which word the *Latines* render *Florus*. The modern *Greeks*, I know not from what ancient name, call it also *Florus*. It is a little bigger than a *Chaffinch*: The Cocks are for the most part yellow: Yet some part of the Wings and Tail inclines to cinereous, but their greater feathers are of a more elegant yellow. The extremities of the Tail-feathers are also altogether yellow; but within of another colour. The Bill is great and sharp, of a pale colour: The Legs and Feet are something red. They are kept in Cages for the sweetness of their singing. They feed for the most part upon Hempseed, and keep much about tall trees, far remote from Meadows. It hatches at least five young ones.

The *Anthus*
of *Bezonius*:
Le Bruant.

CHAP. III. §. I.

The Bulfinch, *Alp* or *Nope*. *Rubicilla* seu *Pyrhula*.

THIS Bird hath a black, short, strong Bill, in figure and structure like that of the *Grosbeak*, but less. [In the elder birds it is something crooked.] The Tongue is as it were cut off: Its Eyes are hazel-coloured: Its Claws black: Its Legs dusky. The lower joint of the outmost Toe sticks fast to the middle Toe.

The Head for the proportion of the body is great. In the Male a lovely scarlet or crimson colour illustrates the Breast, Throat, and Jaws, as far as the Eyes. The feathers on the crown of the Head above the Eyes, and those that compass the Bill, are black: The Rump and Belly white: The Neck and Back grey, with a certain tincture of red. [The Neck, Back, and Shoulders seemed to me blue or ash-coloured.] The quill-feathers of the Wings are in number eighteen; the last or inmost of which on the outer half from the shaft is red, on the inner black and glossie. Of the rest the interior [i.e. those next the body] are black, with a gloss of blue; the exterior dusky or black. Of the first or outmost five the exterior edges in the upper half of the feathers are somewhat white. The tips of the lower covert-feathers are cinereous, in the interior more, in the exterior less. The next to these are of the same colour with the Back. The Tail is two inches long, black, and shining, made up of twelve feathers.

The Cock is of equal bigness to the Hen, but hath a flatter crown, and excels her in the beauty of his colours.

They feed most willingly upon those buds of trees which break forth before, indeed are pregnant with, the leaves and flowers, especially those of the Apple-tree, Pear-tree, Peach-tree, and other Garden-trees; and by that means bring no small detriment to the Gardeners, who therefore hate and destroy them as a great Pest of their Gardens, intercepting their hopes of Fruit.

Turner writes, that they are very docile birds, and will nearly imitate the sound of a Pipe [or the Whistle of a man] with their voice. They are much esteemed for their singing with us in *England*, and deservedly in my judgment. For therein they excel all small birds, if perchance you except the *Linnet*. I hear (saith *Aldrovandus*) that the Hen in this kind sings as well as the Cock, contrary to what is usual in most other sorts of birds.

§. II.

* The American Bulfinch or *Guitarrica* of *Marggrave*.

IT is of the bigness of a *Lark*: Hath a thick, straight Bill, dusky above, underneath white, and a little incarnate. Its Legs are cinereous, with four toes standing after the usual manner. The whole Head, with the Throat, and the lower and middle part of the Neck are of a rare sanguine colour. The Eyes blue: The Ears large. The sides of the Neck, the whole Breast and lower Belly are covered with white feathers. The upper side of the Neck hath black ones, with which a few white are mixt: The Back is grey (with a few black feathers interpersed) as are also the beginnings of the Wings: The rest of the Wings is black, as is the Tail, which is about three inches long. The lateral borders of the Wings are white.

CHAP. IV.

The Shell-apple or Crofs-bill, called by the Germans Krutzvogel. Loxia, Gefn. Aldrov. An Tragon Plinii ?

IN shape of body it is not much unlike the *Green-finch* : It weighs an ounce and half, and from tip of Bill to Tail end is six inches three quarters long.

Its Bill is thick, hard, strong, black, and contrary to the manner of all other birds, crooked both ways, the Mandibles near their tips crossing one another : For the lower, being drawn out into a sharp point, turns upward, the upper bends downward. Neither do they always observe the same side ; for in some birds the upper Chap hangs down on the right side, the nether rises up on the left ; in others contrariwise, the lower takes the right side, the upper the left. The lower Chap is like the *Chafinches*, neither is the Tongue different. The Nostrils are round : The Ears great and wide : The *Irides* of the Eyes from grey tend to a hazel-colour : The Feet dusky, the Claws black. The lowest joint of the outmost toe sticks to that of the middlemost.

The middle parts of the Back and Head feathers are black, the edges green. In the Head there is something of cinereous mixt with the other colours. The Rump is green : The Chin ash-coloured : The Breast green : The Belly white, only under the Tail the middle parts of the feathers are black or dusky.

Each Wing hath eighteen quill-feathers, all blackish, only the outer edges of the foremost are green. The Tail consists of twelve feathers, two inches and a quarter long, and black, with green edges. The Guts have many spiral convolutions. The blind guts are very short.

This bird was described in the Autumn : He that told it told us that it changed colours thrice in a year, being green in the Autumn, yellow in the Winter, and red in the Spring. *Gesner* also saith, that they are first of all red on the Breast, Neck, and Belly ; that then they grow yellow : And that they change colour especially in Winter. Some affirm, that it changes colour every year, so that it sometimes declines more to yellow, sometimes to green, red, or ash-colour. That it changes its colour with age, or according to the different seasons of the year, we cannot but think probable, being so well attested. Perchance also in the same age and season of the year the colour in divers birds may be different. For we saw and bought at *Nuremberg* in *Germany* two of this sort of birds brought up together in one Cage, of which one was green, the other red, when the Summer was almost spent, and Autumn coming on. But however the colours may differ, this bird is sufficiently characterized by the make of its Bill. Kept in Cages they climb up and down the sides with the Bills and Feet, after the manner of *Parrots*.

It is a most voracious bird ; much delighted and feeding very fat with Hemp-feed. It also loves Fir-kernels, and in the Months of *January* and *February* builds its Nest in thofe, or the like trees. They say, that with one stroke of its bill, it will in a trice divide an Apple in halves, that it may feed upon the Kernels, by that means doing a great deal of mischief in Orchards.

In some parts of *Germany*, *Bavaria*, *Suevia*, *Noricum*, they are found in great numbers all the year round. Sometimes they come over to us, and in the Western part of *England*, especially *Worcestershire*, make bad work, spoiling a great deal of fruit in our Orchards.

One thing also more (saith *Aldrovandus*) seemeth to me strange and unusual in the *Crofs-bill* ; that in the Winter-time, when all things shrink with cold, and other birds are mute, the sings ; and in Summer, when other birds sing, the is silent. Which whether it be true or no let those observe among whom such birds are common. It sings, they say, very sweetly.

CHAP.

CHAP. V.

Of Sparrows.

THese Birds feed upon grains of Corn, Crums of bread, worms, and divers Seeds. Their Bills are short, thick, and something crooked : Their colour testaceous or earthy. They are very salacious, and therefore held to be short-lived.

§. I.

The House-Sparrow. Passer domesticus, Aldrov.

THe weight of this well known, and every where obvious bird is 1 ½ ounce : Its length from the beginning of the Bill to the end of the Tail six inches and an half.

The Bill is thick, in the Cock black, at the corners of the Mouth between the Eyes yellowish, in the Hen dusky, scarce half an inch long : The Eyes hazel-coloured : The Legs and Feet of a dusky flesh-colour : The Claws black. The lower joint of the outmost Toe, as in other small birds, grows to that of the middle Toe.

The Head is of a dusky blue, or ash-colour ; the Chin black. Above the Eyes are two small white spots. From the Eyes a broad line of a spadiceous colour. The feathers growing about the Ears are ash-coloured. The Throat [below the black spot] of a white ash-colour. Under the Ears on each side is a great white spot. The lower Breast and Belly are white. The feathers dividing between the Back and Neck, on the outside the shaft are red, on the inside black, but toward their bottoms something of white terminates the red. The rest of the Back and Rump are of the same colour with *Thrushes*, made up as it were of a mixture of green, dusky, and ash-colour.

The Hen-bird wants that black spot under the Throat, as also the white spots on the Neck, and above the Eyes : Its Head and Neck being also of the same colour with the Rump : The nether side of the body of a fardid white. Instead of a white line cross the Wings it hath black feathers with pale reddish tips. In general the colours all the body over are not so fair and lively.

Each Wing hath eighteen quill-feathers, dusky, with reddish edges. From the bastard Wing a broad white line is extended to the next joint. Above this line the covert-feathers of the Wings are of a spadiceous colour ; beneath they have their middle parts black, their exterior edges red. The Tail hath twelve feathers, and is two inches and a quarter long, the middlemost feathers being something shorter than the rest : All of a dusky blackish colour, with reddish edges.

Its Testicles are great, as being a very salacious bird. Its Guts nine inches long : The blind Guts very short. Its Stomach muscular, it feeding upon Wheat, Barley, and other Grain. The Womb of the Female is great. It hath a Gall-bladder.

Whether or no it be so short-lived as is reported, I think there is some reason to doubt.

This kind of bird doth sometimes vary in colour : *Aldrovandus* setting forth a white and a yellow Sparrow : The figures and descriptions whereof may be seen in the fifteenth Book of his *Ornithology*, Chap. 11, 12.

§. II.

** The foolish Bononian Sparrow of Aldrovand.*

IT is in bigness equal to the common Sparrow. The colour of its whole body is yellowish, spotted every where with oblong rusty, or rather red spots, which on the Back are longer and bigger than elsewhere, all over tending downwards. The Bill is red, thick, and short : The Eyes great, their Pupils encompassed with a yellow circle. The Tail and Wings incline to black ; but the ends of the lesser feathers in the Wings are white.

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§. III.

§. III.

* *A small bird akin to the Sparrow*: Aldrov. Book 15. Chap. 17.

THIS small bird, although it have not a black Chin, nor any footstep of it, (as we have observed in some *Hen-Sparrows*) yet by the whole fashion and make of its body it discovers and warrants it felt to be of the *Sparrow-kind*. Its Bill is whitish, as in the *House-Sparrow*. It is painted all over the body with oblong reddish spots tending downward: But those on the underside of the Neck, and on the Breast are more manifest, because those parts are white, whereas the upper, *viz.* the Back, the upper side of the Neck, and the crown of the Head are red; as are also the whole Tail and the Wings: but most of the feathers of these have white ends: The Belly also and the Thighs are white: The Legs and Feet yellowish: The Claws long and black.

§. IV.

* *The spotted, or three-coloured Sparrow of Aldrovand*. Book 15. Chap. 13.

HE calls it three-coloured, for that whereas it consists only of three colours, *viz.* white, black, and yellowish, no one of them can be said to excell another. The whole Head and Neck are white, varied with yellowish spots. The Wings are adorned with the three forenamed colours, but the white and black are in them predominant. The Bill, as in Sparrows, thick, sharp pointed, the upper Chap yellowish, the nether altogether yellow. The *Iris* of the Eye is white; the Pupil black. The Chin, Breast and Belly, Thighs, Legs, Feet, and Tail underneath are of a yellowish white; else the Tail is almost yellow.

§. V.

* *The white-tail'd Sparrow of Aldrovand*. Book 15. Chap. 14.

THE Tail of this, although it be not altogether white, yet is of a pale, whitish ash-colour, whereas otherwife for colour it is almost like the *House-Sparrow*, but hath not that black spot under the Chin. The Bill, as in that, is white: The Eyes black: The Head, and all the lower parts from white incline to yellow. Large spots of almost a ferrugineous colour, beautified with very small milk-white lines, are dispersed all over the Back. All the feathers of the Wings are of a chequered-colour, round about yellow. The Legs and Feet are dusky.

§. VI.

* *The Dalmatic Sparrow of Aldrovand*. Lib. 15. Cap. 21.

THIS bird Aldrovand saw only the Picture of at *Tartaglinus's* a Citizen of *Venice*. It is (saith he) bigger than our common *Sparrow*, but for colour almost like it. * Underneath also it is absolutely white, but above of a pale red, no other colour interceding. The Eyes and Bill for the proportion of the body are great; and this last whitish. The Tail is forked; the Feet yellowish, adorned with transverse lines almost of a flesh-colour. The Claws black, pretty long and sharp.

* The word *Prose*, which as Aldrovand usually accepts it signifies above.

§. VII.

* *The Ring-Sparrow of Bellonius, and the small Sparrow living about Walnut-trees of the same Author*.

THE first of these differs from the common Sparrow, as well in that it is of a diverse colour, as because the spot, which in that is black, in this is yellow. He calls it * *Torquatus*, because a white ring or wreath encompasses the Eyes under the Eye-brows. Moreover, it is more cinerous than the common *Sparrow*, hath a greater voice, and exceeds it in the bigness of the Body and Bill. It abides in Woods, building in the hollows of trees.

* Ringed.

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The other, called *Frignet* by the *French*, is least of all, having a very short, thick, black Bill; its Feet, Legs, Head, and Wings, like those of the *Wall-Sparrow*. It builds in Trees.

§. VIII.

* *The tailed purple and black Indian Sparrow of Aldrov. Book 15. Chap. 28.*

IT hath a Tail five inches long, made up of ten very black feathers. The quill-feathers of the Wings are also coal-black. The Head, Neck, and Rump are of a deep purple colour, yet the roots or bottoms of the feathers yellow. The Bill is pretty thick, somewhat hooked and sharp, something resembling that of the *Butcher-bird*, black above, beneath where it grows to the Head white. The colour of the Legs I know not, for they were wanting in the case communicated to me, but it is likely that it hath black ones.

§. IX.

* *The Tijepiranga of Brasil or American Sparrow, Marggrave*.

IT is a little bigger than a *Lark*, and sings like our common *Sparrow*. Its whole Body, Neck, and Head are of a delicate red or sanguine colour: But the Wings and Tail of a shining black, saving that in the beginning of the Wings there is something of red mixt therewith. The Legs are black, below the Knees bare of feathers, above covered with black feathers. The Bill like a *Sparrow's*, the upper Chap black, the nether black also toward the point, but white toward the Head. The feathers on the Head black, which she is sometimes wont to ruffle up after the manner of *Sparrows*. All the feathers of the whole body are black within, red without, yet so complicated, that outwardly they appear wholly red. The Tail is almost three inches long. Each foot hath four Toes, and so disposed as in most other birds.

There is found another sort of this bird, of the bigness of a *Sparrow*, whose whole body is covered with bluish ash-coloured feathers: But the Wings approach something to a Sea-green. In the Belly and lower part of the Neck or Throat it is white, or rather of a shining silver colour. The Legs are ash-coloured, as is also the Bill, which is like a *Chaffincher's*. Each foot divided into four Toes, and those situate as is usual in birds.

§. X.

* *The long-tail'd Indian Sparrow with a scarlet Bill of Aldrovand*.

IT is of equal bigness to our *House-Sparrows*, if you except the longer feathers of the Tail. It hath a short thick Bill of a scarlet colour. Its Head is flat, elevated near the Neck, blackish, with a mixture of a greenish colour inclining to blue; which also is seen running downward through the Back and upper part of the Wings. The Wings are of three colours chiefly; first, that now mentioned; secondly, a white, as appears in the figure; thirdly, a black: To which succeeds fourthly, a yellowish colour, next which are the quill-feathers again black, but cinerous within. The Throat, lower side of the Neck, the Breast and Belly are white. The Tail is double, as in the *Peacock*, and also of two colours: The lesser which sustains the greater, being as it were its prop, is white; the greater, consisting of four very narrow feathers of nine inches long, is of a deep black. The Legs and Feet are spotted of black and white; the Talons black, and as in birds of prey very sharp and hooked.

§. XI.

* *Another Indian long-tail'd Sparrow of Aldrovand, Book 15. Chap. 23.*

THIS is an exceeding beautiful bird, even fairer than the former: Of the same bigness. Its Bill is blue; Its Head also, as in that, flat; but more elevated in the Neck; all black; its Eyes also black, encompassed with a white circle, and having a yellow *Iris*: Its Neck and Breast are of a scarlet colour; its Belly and Thighs white:

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white: Its Wings, Back, and Tail black: But a certain paleness is mingled with the quill-feathers of the Wings. The longer feathers of the Tail, (which are two exceeding long ones, viz. five Palms, and very broad; and a third first also broad, but ending in very slender filaments) are supported by other smaller ones. The Legs and Feet are white: The Claws black, and, as in the precedent, notably sharp and hooked.

§. XII.

* *A short-tail'd Indian Sparrow of Aldrovand, Book 15. Chap. 24.*

THIS Bird is lesser than the two former, all over black: Which colour yet hath I know not what kind of blue and violet gloss; as is usually seen to happen in deep blacks. The Bill and Feet are of a flesh-colour; the Claws black. The Eyes also black, but encompassed with a white circle.

§. XIII.

* *The short-tail'd Italian Sparrow of Aldrovand.*

THE Bird (saith he) which you see here delineated, having a very short Tail, called *Passerino*, that is a little Sparrow, is sometimes taken in the Country about *Bologna*. Its whole body is of one colour, viz. yellowish: Yet its Breast and Belly are whiter than the other parts, Its Bill is of a deeper yellow.

§. XIV.

* *The rumpless black and red Indian Sparrow of Aldrovand.*

THE whole body, both above and underneath, as also the beginnings of the Wings are of a most lovely shining scarlet colour: The rest of the Wings is black: But yet, if their feathers are spread out, something of white appears in their sides. The Feet also are black: Moreover, it hath, along the Back two oblong, black spots, almost contiguous. The Bill for the proportion of the body small, (for it is a thick-bodied bird for its bigness) and less also than in the common Sparrow, white where it is joyned to the head, else black, sharp, and slender. It altogether wants a Rump.

§. XV.

* *The rumpless blue, red, and black Indian Sparrow of Aldrovand.*

THIS Bird is longer than the former, but less corpulent, and of three colours, especially, viz. red, blue, and black. The Head, Neck, and Breast, and all the lower parts are of a deep red colour. On the sides of the Neck are two large contiguous spots of a semilunar figure and scarlet colour. The Wings are very long, black and blue about the sides. The Legs short and black. The Bill a little crooked, black, but white near the forehead.

All these Indian Sparrows are to us unknown: Aldrovandus also himself saw only the pictures of them, not the birds themselves. But Pictures of them (as Pliny rightly saith) fallacious, these descriptions cannot be thought to come near the exactness of such as are taken from the birds themselves.

§. XVI.

The Mountain Sparrow, frequent in Stiria and Carinthia.

FROM the tip of the Bill to the end of the Claws it was by measure six inches long. Its Tongue was something cloven: The Irides of its Eyes between grey and hazel-coloured. Its Chin was black: It had also on both sides a black spot about the Ears. A border of white compasses the Neck almost half way, and the spots about the ears. The Head of a dusky red. The outer Webs of the feathers on the middle of the Back are red, the inner black. The Rump is of a yellowish ash-colour. The Breast

Breast and Belly of a fordid white. Of the second and third row of Wing-feathers all but the eighth or tenth outmolt have white tips. The small feathers on the base or ridge of the Wing are red, as are also the outmolt edges of the rest. The number of quill-feathers is eighteen. The Tail is two inches and a quarter long, made up of twelve feathers, of almost equal length. The Bill is black, more than half an inch long; at the corners of the Mouth and lower Chap yellow. It had a large Craw, full of seeds: The muscles of the Gizzard were not very thick. The Testicles great and white.

The description of the *Mountain Sparrow* in *Aldrovand* agrees indifferently well with ours, save that he attributes to it two black spots beside the Eyes; one of which is wanting in our bird; at least *Mr. Willughby* mentions only one.

We saw abundance of these birds in the mountainous Countries of *Stiria* and *Carinthia*, as we travelled from *Vienna* to *Venice*.

§. XVII.

* *The Wood-Sparrow of Aldrovand, Book 15. Chap. 16.*

IN bigness it exactly corresponds with the common Sparrows. Its Bill from yellow inclines to white; and is (as I may to say) exactly Sparrow-like. The crown of its head, as in the precedent *Mountain Sparrow*, is of a rusty colour, inclining to Vermilion. The circumference of the Eyes white, the Iris yellowish, the Pupil black. From Chin to Tail it is of an ash-colour, but the extremities of the feathers incline to red. The Chin and under side of the Neck are crossed with continuous, transverse, blackish lines; whereas in all other Cock-Sparrows we suspect, nay, we positively affirm, that they are wholly black. The Back, Tail, and Feet are of a dusky ferrugineous, save that the tips or ends of the feathers are altogether yellow. The Wings are of the same colour, but the first feathers, which cover their ridges end in a notable white.

§. XVIII.

* *The Brazilian Sparrow, called Guiranheematu by Marggrave.*

IT is of the bigness of a Sparrow. The Head above is of a pale yellow, as is the Throat: The Neck, Breast, and lower Belly of a deeper yellow. The Wings are mixt of green and yellow, and distinguished with dusky, as is also the Tail. The Eyes and Bill black: The Legs dusky. The Cock of this kind sings rarely well, like a Finch. The Hen is of the same bigness, covered with Sparrow-like feathers, sings not, but cries *Tichrip*, *tichrip* like a Sparrow.

CHAP. VI. §. I.

The Chaffinch: Fringilla, Σινζα Aristotelis.

IT is something less than a House-Sparrow, weighing not a full ounce. Its Bill is sharp, strong, white underneath, above and toward the tip dusky: The lower Chap equal to the upper: The Tongue cloven and rough: The Irides of the Eyes hazel-coloured: The Ears great.

The Head in the Cock is blue, but the feathers contiguous to the Nostrils black. The Back is reddish with a mixture of ash-colour or green: The Breast red; the Belly under the Tail white.

The colours of the Hen are not so bright and lively. But its Rump is green: Its Back not so red: The Belly from red inclines to a dirty kind of green. The Breast also is of a duller colour.

The Quill-feathers in each Wing, in number eighteen, all but the three first, or outmolt have their bottoms and interior Webs white; their exterior edges yellowish, or rather green. In the Cock the small feathers investing the ridge or base of the Wing are blue. Above in each Wing is a remarkable white spot: Then after an interstice of black succeeds a long white fillet, beginning from the fourth quill, and after

after the tenth continued through the tops of the covert-feathers. That part of this white fillet which passes through the tips of the coverts is tintured with yellow.

The Tail is two inches and an half long, and made up of twelve feathers, of which the outmost on each side have their bottoms, and also their tops on the outside the shaft black, their middle part white. The next to these have less white, viz. only near the top, and on the outside the shaft: The three subsequent on both sides are black: the two middlemost cinereous with greenish edges.

The Liver is divided into two Lobes, the right being the biggest. The Stomach not very fleshy. The outmost Toe in each foot, as in other small birds, grows to the middlemost at bottom.

This bird sometimes varies in the colour of its feathers. For *Gesner* affirms, that himself had seen a *Chaffinch* all over white: And *Aldrovandus* describes two others, one whose whole body from white declined to yellow: Another that was partly yellowish, and partly blackish.

They are (saith *Aldrovandus*) birds of passage: They love moderate cold, but are offended by immoderate. But with us in *England* they fear no cold, abiding here all Winter, be the weather never so sharp: Neither is there any Bird more frequent in all parts of this Land, excepting perchance the *Lark*, the *Sparrow*, and the *Tellow-hammer*.

§. II.

The Bramble or Brambling: *Fringilla montana* seu *Montifringilla*, 'Ορσμιζα, *Arist.*

Its weight and bigness it agrees with the precedent. Its Bill is thick, strong, freight, from a broad base diminishing into a sharp point, almost like a Cone or Funnel; in some birds wholly black, in others black at point, and yellow at bottom. Its Tongue like the *Chaffinches*; the upper Chap of equal length with the lower, its sides strong and thin'd into sharp edges. [The Bill of the Female hath no part yellow.] Its Feet of a pale dusky colour: The outer Toe joyned to the middle below, as in other small birds. From the head to the middle of the Back the colour in the Cock is like that of a *Starling*, a shining black, the edges of the feathers being of a reddish ash-colour. The lower part of the Back is white. The Throat is of a yellowish red; the Breast white; the feathers behind the Vent reddish.

In the Female the Head from red or dusky inclines to cinereous: The Neck is ash-coloured: The feathers of the Back have their middle parts black, their borders of that same reddish ash-colour. The Throat is not so red as in the Cock. Within the ridge of the Wing it hath less yellow, and without no Orange colour. In brief it is every where more discoloured.

The interior quill-feathers of the Wings are red, the inmost of all black, with red edges. Beginning from the fourth, seventh, or eighth of the subsequent feathers have a white spot on the outside their shafts, by the tips of the feathers of the second row. Underneath also their exterior edges are whitish; else the quill-feathers are all black. The Plumage near the base of the Wing underneath is of a lovely yellow, above of an Orange colour.

The Tail is four inches; long, compounded of twelve feathers, of a black colour, but the exterior Web of the outmost feather on both sides is white, and sometimes also the interior. The tips and edges of the two middle feathers are of a reddish ash-colour.

At *Venice* we found great numbers of these birds in the Poulterers shops in Winter time; whence we infer that they are common in the Country thereabouts at least in that season of the year. They are found also in *England*, but more rarely.

These birds also sometimes vary in their colours. Hence in *Aldrovandus* we have three figures and descriptions of *Montifringilla*: Of which that in the second place is of a paler colour, and hath its head wholly white. The third is altogether like the first, save that under the Bill it hath no black: And besides that second yellow streak which is in others, in this was far more conspicuous.

§. III.

The great pied Mountain-Finch or Bramlin: *Montifringilla calcaribus* *Alauda* seu major.

It is equal in bigness to the common *Lark*, from the tip of the Bill to the end of the Tail being five inches and a quarter long; and between the extremes of the Wings stretched out twelve and three quarters broad. Its Bill is half an inch long, of a yellow colour, with a black tip. The end of the Tongue is divided into filaments. The top of the Head of a fulvous red, darker toward the Bill. [Mr. *Johnson* attributes to the Head and upper part of the Neck a dusky red or chestnut colour.] The upper side of the Neck, the Rump and sides are also red: So is the Breast, but paler, the rest of the under side, Throat, Belly, Wings, &c. is white. The under side of the Neck, the Back and scapular feathers are elegantly variegated with black and a reddish ash-colour; the middle part of each feather being black, and the outsidess red. The black spots appear of a triangular figure. In the upper part of the Wings and bottom of the Back there is more of red.

Each wing hath eighteen prime feathers, of which the eight outmost or longest are black; yet their bottoms, as far as they are hidden by the second row, except the outer edge of the outmost feather are white. Moreover, the very tips, or rather edges of the tips of all excepting the two outmost, are white. The seven next, which take up the middle part of the Wing, are wholly white, save that near the tip on the outside each feather hath an oblong black spot. The remaining three or four next the body are black, having their uppermost edges red. All the covert-feathers of the Wings, excepting those next the body, and two or three, which make up the bastard Wing, are white; those excepted being black. But Nature (as I see) observes not an exact rule in the colours of this birds Wings: For in the bird described by Mr. *Willughby* the covert-feathers of the black quills were for the most part black, of the white ones white: Yet in general in all birds that we have seen there were large white spaces in each Wing. The Tail is somewhat forked, two inches and an half long, made up of twelve feathers, the two outmost whereof on each side being wholly white, save a very little of the outer edge toward the tip, which is black, more in the outmost, less in the next. The outward Web of the third on each side almost from the top quite down to the bottom is white: The remaining six are black, having only their edges about their tips white. The Legs, Feet, and Claws are coal-black. The back-Claw or Spur is longer than the rest, as in *Larks*, of about half an inch. The outmost Toe for a good space from the divarication is joyned to the middle one, as in most small birds.

This Bird Mr. *Willughby* found and killed in *Lincolnshire*. Mr. *Johnson* sent us the Bird it self, and the description of it out of the Northern part of *Turkey*.

The same Mr. *Johnson* sent also the description of another bird of this kind by the name of The lesser Mountain-Finch or Bramlin, together with the case of the Bird; which by the case I took to be only the Female of the precedent, he from its difference in bigness, place, and other accidents rather judges it a distinct species. I shall therefore present the Reader with his description of it.

It is of the bigness of a yellow Finch, hath a thick, short, strong, black at the very point, and the rest yellow. All the forehead of a dark chestnut, almost black, growing lighter backwards, about and under either Eye lighter chestnut: The back of the Neck ash-coloured, which goes down the Back to the Tail, but there more spotted with black. Under the Throat white, but Breast and Belly dashed or waved with flame-colour; at the setting on of the Wing grey. The first five feathers blackish brown, all the rest white, save a little dash of brown near the point of each feather. The Tail consists of twelve feathers, the three outmost on either side white, save a little small dash of dark brown: The rest dark brown. The Feet perfectly black. The hind-claw as long again as any of the rest.

CHAP. VII.

* *The Brazilian Sayacu of Marggrave.*

TO what tribe of small birds this is to be referred we do not certainly know: But because the Author faith it is of the bigness of a *Chaffinch*, we have placed it here. The whole body is covered with feathers of a colour mingled of cinereous and Sea-green: But in the Wings and Back the Sea-green is so mixt that, exposed to the Sun, they shine marvellously. The Bill is black; The Eyes also wholly black.

CHAP. VIII.

* *The Brazilian Tijeguaparoara of Marggrave.*

IT is of the bigness of a *Lark*; hath a short, thick Neb, dusky above, white underneath. The top and sides of the Head, the Throat, and lower side of the Neck are covered with yellow feathers, spotted with sanguine. [This Bird was a Female, for in the Male the Plumage of these parts is wholly sanguine.] The upper side of the Neck and whole Back with ash-coloured ones, *somewhat shaded: The Wing-feathers are dusky, with white borders: As also the Tail: But the covert-feathers of the Wings are cinereous. The Back for the most part, excepting the ends of the feathers, the sides of the Neck, the Breast, and whole Belly, with the Thighs are covered with white feathers. The Legs and Feet are dusky: Four Toes in each placed after the usual manner. It hath black Eyes.

* The words are *umbra albigatissima* misc-larby which perchance the Author might mean, mixt with a little dun-colour.

CHAP. IX.

* *The Brazilian Guirapera of Marggrave.*

THis is also of the bigness of a *Lark*: Hath a short, thick, black Bill. The upper part of the Head and Neck, the whole Back, and lower Belly have feathers of a dark yellow colour, like yellow Wax: The lower side of the Head and Neck, the Throat and Breast black ones: Of which colour there are also a few in the Belly intermingled with the yellow. The Tail is two inches long, and reaches further than the Wings. Both Tail and Wings are made up of dusky and blackish feathers, every one of which hath its side-edges of a Sea-green, so that the Wings appear brown, streaked with green: And in like manner the Tail. The Thighs are of a Wax-colour: The Legs and Feet of a dark grey or ash-colour. It hath four Toes disposed according to the usual manner, armed with black Claws.

CHAP. X. §. I.

The Goldfinch, or Thistle-finch; Carduelis.

THis Bird, in the opinion of *Aldrovandus* and *Bellonius* is the *Χρυσολύπτος* of *Aristotle*, by the later *Greeks* called *Αργυρίδι*. It is less than the *House-Sparrow*; of an ounce and half weight; five inches and an half length from Bill-point to Tail end; nine and a quarter breadth between the utmost tips of the Wings spread out. Its Head for the bulk of the body is of the biggest: Its Neck short; Bill white, but in some birds black at the very point, little more than half an inch long, thick at the head, ending in a sharp point, of a Conical figure: Its Tongue sharp: Eyes hazel-coloured. A ring of scarlet-coloured feathers encompasses the basis of the Bill. From the Eye to the Bill on each side is drawn a black line. The Jaws are white: The

The top of the Head black, from which a broad black line, produced on both sides almost to the Neck, terminates the white. The hinder part of the Head is white. The Neck and forepart of the Back are of a fulvous or reddish ash-colour. The Rump, Breast, and sides are of the same colour, but paler. The Belly white. The Wings and Tail black; Yet the tips of the principal feathers in both are white. Besides, the Wings are adorned with a most beautiful transverse streak of yellow. If you exactly view each quill-feather, you will find the first or outmost wholly black; all the rest tipped with white; and besides the lower half of the outward Web of every feather from the second to the eleventh inclusively of an elegant yellow, which together make that yellow bed across the Wing we now mentioned; whence this bird is supposed to be called *Χρυσολύπτος*. The interior covert-feathers of the Wings are also yellow. The Tail is two inches long, composed of twelve black feathers, of which the two outmost have a great white spot on their tips; the next a lesser; The third none; the fourth again a little one, and the fifth a greater.

The Legs are short; the Back Toe strong, armed, with a Claw longer than the rest. The lower of the outer foretoe grows fast to that of the middle toe. The blind Guts, as in other small birds, are very short and little. It hath also a Gall-bladder.

The Hen-bird hath a smaller note than the Cock, and sings not so much, and the feathers on the ridge of the Wing are dusky or cinereous, whereas in the Cocks they are coal-black: and these (saith *Aldrovandus*) are constant and infallible marks by which the Sexes may be distinguished.

Goldfinches are gregarious birds, for the elegance of their colours and sweetness of their singing every where well known and highly esteemed. They are of a mild and gentle nature, as may even thence appear, that presently after they are caught, without using any art or care, they will fall to their meat and drink; nor are they so feared and affrighted at the presence of a man, as to strike their Bills and Wings against the sides of the Cage, as most other birds are wont to do. Nor are they very much troubled at their captivity and imprisonment in a Cage: Nay, if they have continued there a good while, they like it so well, that though you let them loose, they will not fly away, as (saith *Aldrovandus*) I may self have observed, to whom I refer the Reader. They feed upon the seeds of Thistles in Winter times, from whence they took their name, and not of Thistles only, but of Teasel, and Hemp, and Dock, and Poppy, as *Albertus* tells us. The *Goldfinch* kept in a Cage will with its Bill draw up a little pot of water hanging upon a string, and putting its foot sometimes under the string when it can reach the Pot, will drink out of it, and quench its thirst, which other small birds also will learn to do. Besides that little Thistle-finch (saith *Turner*) adorned with a golden fillet, I know another spinivorous bird of a green colour, which, in like manner as the *Goldfinch*, out of two pots, one going up, the other mean time going down, will take meat out of the one, and drink out of the other. The same doth also the *Millet-bird*, which our Country men call a *Linnet*. The same likewise will imitate any tune you whistle to it. So then not only that bird which is in Greek called *Θεζουμς*, and in *Latine* by *Gaza* rendered *Carduelis*, will do what you bid it, and use its Bill and Feet for a hand, but many others also. All which things (saith *Aldrovandus*) daily experience proves to be most true. It builds its Nest in thorns, and trees. *Gesner* affirmeth, that it lays seven Eggs, *Bellonius*, eight: The difference is not great, and it may lay sometimes the one, sometimes the other number.

The *Goldfinch*, by reason of age, sex, or other accidents, varies sometimes in its colours. *Aldrovandus* sets forth four varieties: 1. One not full grown, which had no red at all on its Head: 2. One with white Eye-lids: 3. A white one with a red head: 4. A whitish one, which yet on the forepart of the Head and under the Chin had something of red. Besides which he describes also a bird of kin to the *Goldfinch*, (which perchance was a bastard kind) in these words.

In bulk of body it exceeds a *Goldfinch*, being equal to a *Chaffinch*. A circle of a lively Saffron colour encompasses the Bill. Its Eyes are like a *Goldfinch*, but bigger. Its Head, except the Saffron ring now mentioned, and its Back are of the same colour, viz. blackish. The Breast is of a black green, as are also the small feathers, covering the ridges of the Wings: Whole quill-feathers are black, and much more varied or distinguished with white, than in other birds of this kind. That part which in other *Thistle-finches* is yellow, in this is of a pale colour. The Tail of as deep a black as in others; but in the two outmost Tail-feathers on each side when extended appeared something of white; which otherwise, when the Tail was closed, was hidden, and not exposed to view. The whole Belly from cinereous inclined to dusky.

§. II.

* The Brazilian Jacarini of Marggrave.

IT is of the bigness of our *Goldfinch*: Hath a thick, ash-coloured Bill: Ash-coloured Legs and Feet, with four Toes situate after the usual manner. The whole Body is covered with black feathers, but shining with a gloss like polished steel. The Wings within side are white. The Eyes are blue, and behind each a large hole instead of Ears. This Bird being of the bigness of a *Goldfinch*, and having a Bill not unlike it, not knowing better to dispose of it, I have inserted in this Chapter, although it agrees not in colour either with the *Goldfinch*, or any other European Bird, that I know, of this bigness.

CHAP. XI.

Of the Linnet.

§. I.

Of the Linnet in general.

THE Characteristic notes of this kind are, 1. A size of body something less than a *Chaffinch*: 2. A testaceous or earthy colour, mixt of cinereous and dusky or brown: 3. A Tail a little forked: 4. A peculiar colour of the outmost feathers of the Tail, viz. brown, with white borders or edges: 5. A sweet note. Of *Linnetts* we have observed four sorts in England: 1. The common: 2. The greater red: 3. The lesser red. 4. The Mountain *Linnet*.

§. II.

The common *Linnet*: *Linaria vulgaris*.

IT weighs about an ounce: From the tip of the Bill to the end of the Tail being half a foot long; between the tips of the Wings spread forth ten inches broad. Its Bill is half an inch long, thick, strong, black above, white underneath. The Tongue is as it were cut off: The Nostrils round: The Head part coloured of cinereous and black; the Back of black and reddish, the middle part of each feather being black, the edges or outsidings in the Head cinereous, in the Back reddish. The Breast is white: The lower Belly about the Vent yellowish. The region of the Craw or bottom of the Gullet is of a lovely red, the edges of the feathers being yellowish. Each Wing hath eighteen quill-feathers, all black but the edges, which in the exterior are whitish, in the interior red. The foremost feathers of the second row are black, the edges of the interior, or those next the rife of the Wing red. The lesser covert-feathers about the ridge or base of the Wing are red. The Tail is somewhat forked, its two outmost feathers being two inches and a quarter long; the middle only two: Of the middle two the borders or edges are red, of the rest white. The Tail consists of the usual number of twelve feathers. It delights to feed upon Line-feed, whence *Gesner*, in imitation of the *French*, (who call it *Linote*) imposed on it the name of *Linaria*. It seems not to have been described or mentioned by the Ancients: Howbeit, *Belonius* makes it to be the *Regulus* of *Aristotle*. It is kept in Cages with us for the sweetness of its singing; wherein, in my judgment, it excels all other small birds. It feeds upon Canary seed, Panic, Millet (whence also it is by some called *Miliaria*) Rape seed, Cole seed, and Hemp seed. But whatever feed it eats it first decoctates it with its Bill, that it may feed only on the pulp. But Hemp seed (that we may note that by theby) makes birds that feed upon it so fat that it either kills them, or takes from them all courage and list to sing. *Olinia* saith, that the *Linnet* builds in trees that are not very tall, and lays three or four Eggs. We have observed it to build in black or white thorn bushes, or Furze bushes. Mr. *Willughby* ascribes to the Feet of this bird an obscure dusky or blackish colour; *Olinia* a middle colour between flesh-colour

* i. e. hulls or pills it.

colour and white. Perchance the Feet of the younger birds are paler, of the old darker coloured: Or those of the Cock blacker, the Hen-birds whiter. Mr. *Jeffer* sent us a *Linnet* of the common sort with Feet perfectly black, but that was extraordinary.

An Addition to the History of the Linnet out of our English
Writer of Singing Birds.

YOU may take the young ones out at four days old, if you intend they shall learn to whistle or hear any other birds song: For then being so young they have not the old birds song, and are more apt to take any thing than if you suffer them to be in the Nest till they are almost quite fledg'd. You must be sure when you take them out so young, to keep them very warm, and to feed them but a little at a time. Your meat must be Rape seed soaked, and then bruised, mingled with full as much soaked white bread. You must make fresh every day; for if it be four, it immediately makes them scurvy, and not long after die. You must not give them meat too dry, for if you do it will make them Vent-burned; and that is as bad as if they scoured. If you intend to whistle to them, do it when you feed them. For they will learn very much before they can crack hard feeds. So hang them under any bird you intend they shall learn his Song. I have known several that have been taught to speak.

You may know the Cock-Linnet by these two marks: 1. The Cock is much browner on the Back and pinion of the Wing than the Hen. 2. By the white of the Wing. Take your young Linnet when the Wing-feathers are grown, and stretch out his Wing, holding his body fast with the other hand (otherwise I have known them by a sudden jerk to break their Wings) and then observe the white upon the fourth, fifth, and sixth feather, if it be glossie and glittering, and the white goes close to the quill, this is a certain sign of a Cock.

The Linnetts diseases and their cures.

1. This Bird is sometimes troubled with melancholy, and then you will find the end of his Rump to be very much swelled; which you must prick with a Needle, and let out all the corruption, squeezing it out very well with the point of the Needle; then anoint him with the ointment made of fresh butter and Capons grease, and feed him for two or three days with Lettice, or Beet feeds, and the leaves also: And you may give him the seeds of Melons chopt in pieces, which he will eat very greedily; and when you find him to mend take the Melon seeds away, and give him his old diet again: Put into his water two or three blades of Saffron and white Sugar-candy for a Week or more, till you perceive the bird to be wholly recovered.

2. The disease this Bird is most troubled withal is a scouring; of which there are three sorts: The first very thin, and with a black substance in the middle, which is not very dangerous; for I have known many sing very strong and lavish when they have had this scouring in a very violent manner. The second is between a black and a white, but not so thin as the other, but very clammy and sticking. This is worse than the former. It is recovered by giving your bird some Melon seed shred, and Lettuce seeds and Beet seeds bruised, and in his water some Liquorice and white Sugar-candy, with a little flour of Oatmeal. You must be diligent at the first to observe him when he is sick, that so he may have a stomach to eat: For in two or three days his stomach will be quite gone, and then it will be hard recovering him again. The third and worst sort of scouring is the white clammy scouring, which is dangerous and mortal, if not well looked after at the first. This is occasioned by bad feeds, and many times for want of water. If it be not taken at the first appearance it immediately causeth him to droop, and fall from his meat, and then all medicines are useless. First give him Flax-seeds, taking away all other seeds; then give him Plantain-seeds, if green, otherwise they will do him no good: For want of Plantain-seeds give him some of the Leaves shred small, and some Oatmeal bruised, with a few crumbs of bread: And in his water give him some white Sugar-candy and Liquorice, with a blade or two of Saffron.

To avoid the peril of scouring *Olinia* advises to let him have always a piece of chalk in his Cage.

§. III.

The greater red-headed Linnet : *Linaria rubra major*.

THis is something less than the *common Linnet* : Its Bill short, thick, of a Conical figure like the *Chaffinch*, the upper Chap black, the lower at the base white : The Tongue sharp, and as it were cut off, as in the *Chaffinch* : The Nostrils round : The Eyes hazel-coloured. The crown of the head adorned with a red or sanguine colour, but not very bright and shining. The rest of the Head and Neck round about are cinereous. The Shoulders, Back, and covert feathers of the Wings are red. The Breast is tinged with red. The sides under the Wings are of a yellowish red or spadiceous colour. The outmost quill-feathers of the Wings are black, the inner dusky. The exterior edges of the eight outmost, excluding the first, are white, the white from the bottom towards the top extending it self in breadth in every feather more and more in order, till in the ninth feather it reaches almost to the tip. These white edges in the Wing complicated concur to make up a white spot externally conspicuous. From the ninth the tips of the sixth or seventh succeeding are blunt and indented. The interior margins of all the quill-feathers are white, and the tips also of those toward the body, or setting on of the Wing. The Tail is something forked, two inches and an half long, made up of the usual number of twelve feathers; all sharp-pointed, and of two colours, both edges, as well inner as outer, being white, but the outer more; which colour in the extreme or outmost feathers takes up almost half the breadth of the exterior Web : In the rest it grows narrower and narrower by degrees to the middlemost, which are almost wholly black, the very extreme edges only remaining white. The feathers incumbent on the Tail in the middle along the shaft are dusky, their outsidings being white. It hath small Legs and Feet of a reddish dusky colour, but not perfectly black; black Claws, the hinder the biggest, the two outer Claws equal one to the other : There is also the like cohesion between the outmost and middle toes, as in other birds.

In the Female neither is the Back bay, nor the crown or Breast red; but the Back dusky, with a tincture of green, the Breast of a dirty yellow, varied with dusky spots. The other notes agree in both Sexes.

It weighs five drachms, from tip of Bill to end of Tail is five inches and an half long; to the end of the Claws but five. A line of nine inches and a quarter measures the Wings stretch out. It is common on the Sea-coasts.

§. IV.

The lesser red-headed Linnet : *Linaria rubra minor*.

THis is lesser than the precedent. The Back coloured like the *common Linnet* : The forehead adorned with a remarkable shining red spot : The Bill like that of the greater red Linnet, but less : The Breast red; the lower Belly white. The prime feathers of the Wings and Tail dusky : The Tail about two inches long, and something forked. The outmost borders or edges of the Wing and Tail-feathers round are white.

The Legs and Feet are dusky; the Claws black, and long for the bigness of the bird; but the Legs very short. The like cohesion or adnascency of the outmost and middle toe at bottom, as in other small birds.

In this kind the Female also hath a spot on her head, but more dilute than that of the Cock, and of a Saffron colour.

This Bird differs from the precedent red Linnet in many particulars. 1. In that it is less : 2. That it hath a lesser and sharper Bill : 3. That the Hen agrees with the Cock in the spot on its head, though it be paler : 4. That the Legs and Feet in this are blacker : 5. That the border of white about the tail-feathers is narrower : 6. That the tips of the second row of Wing-feathers being white make a transverse white line cross the Wing. Lastly, that this Bird is gregarious, flying in flocks, not that.

Aldrovandus describes two sorts of red Linnets, neither of which agrees with either of ours in all points. See their description in his *Ornithology*.

§. V.

§. V.

The Mountain Linnet : *Linaria Montana*.

THis was found by Mr. Fr. Jessor in the Mountains of the Peak of Derbyshire, and sent to us. It is twice as big as the precedent. The colour of its Head and Back is the same with that of the *common Linnet*; for the middle parts of the feathers of both are black, but the outsidings or edges of those on the Back red, on the Head cinereous. The middle parts of the feathers on the Throat and Breast are also black, but the edges whitish. Only the Rump is of a very fair shining scarlet or Orange-tawny colour. The edges of the middle quill feathers of the Wings are white, as are also the tips of those of the second row. The Tail is two inches and an half long, consisting of twelve feathers, of which the two middle are all over of one uniform brown or dusky colour. Of the rest, as well the outer as inner edges, are white : These white edges in the outmost feathers are broader than in the rest. Its Bill is like that of the precedent, viz. less for the proportion of its body than that of the second species. The whole bird from Bill to Tail was six inches and an half long; to the Claws five and an half.

CHAP. XII.

The Siskin : *Spinus five Ligurinus*.

ITs Head is black. The upper side of its body, viz. Neck and Back are green. Yet the * shafts of the feathers on the Back are black; and the Neck being darker * This word is to be taken largely for the middle part about the shaft. than the Back seems to partake something of the colour of the Head. The Rump is of a greenish yellow : The Throat and Breast of a yellowish green : The Belly white : The feathers under the Tail yellowish, with oblong dusky spots in the middle down the shaft. The feathers also investing the sides are spotted in the middle with brown. The Hen is paler and more discoloured. Her Throat and sides under her Wings are white, the middle parts of the feathers being spotted with brown. The Head and Back are of a greenish ash-colour, with brown spots in the middle. The Throat and Breast have less of green.

The Wings are crossed by a broad line or bed of yellow. The Pinion-quill of the Wing is all over dusky, only the edges green. Of the nine following the outer Webs are green; the green part is widened by degrees in every feather, till in the last it take up half the length. From the tenth almost the lower half of each feather is yellow, the upper black. The exterior covert-feathers of the Wings are black, the edges of the interior green. The Tail consists of twelve feathers, the two middlemost black : The rest above half way of a most lovely yellow, with black tips. The uppermost tips of the feathers, as well in the Wings as in the Tail, are grey. The lower Mandible of the Bill hath an eminency or angle on each side, received in the upper. The Tongue is sharp, horny at the tip, and channelled : The Eyes hazel-coloured. The outer and middle Toe have the like cohesion at bottom as in other birds.

It is kept in Cages for its singing : It is common in Germany and England. At Vienna in Austria they called it *Seifel*, a name not much different from our English *Siskin*. In Saxony it is known by the name of *Barley-bird*, so called because it comes to them in Barley-seed time. All the Winter, and in the beginning of the Spring, it flies in flocks. It differs from the two following birds, 1. In that it is a little bigger : 2. It hath a longer Bill : 3. A black Head : 4. A shorter Tail, more than half yellow : 5. A stroke or bed of yellow cross its Wings.

Aldrovandus writes, that it seldom or never appears in cold Countries, as France and England, as *Belonius* and others report : But we have by experience learnt the contrary. It is of a very mild nature, and not at all crafty, so that it is easily taken by any kind of engine or deceit.

This bird is called by *Aristotle* and the ancient Greeks *Ἀσκαρίς*, as *Aldrovandus* is of opinion. *Σινίσκος* also is the name of a bird, supposed to be this, as well with the Greeks as with the Latines.

CHAP.

CHAP. XIII.

Of the Canary-bird, out of Gefner, Aldrovandus, and Olina.

Canaria is an Island of the Atlantic Sea, on the left side of *Mauritania*, one of those which the Ancients for the excellent temperature of the Air called *Fortunate*, so denominated from the multitude of great Maltive Dogs, as *Pliny* out of *Juba* delivers. All those Islands, which the Ancients called *Fortunate*, are now adays called the *Canaries*. Out of which in our Age are wont to be brought certain singing birds, which from the place where they are bred they commonly call *Canary-birds*: Others call them *Sugar-birds*, because the best Sugar is brought thence. Of this bird we have thought fit to treat next after the *Siskin*, because some have judged it to be a sort of *Siskin*, as *Turner*: And in truth to look upon for colour and shape it is very like it. This bird *Gefner* from the relation of a friend of his thus describes. It is of the bigness of the common *Titmouse*, hath a small white Bill, thick at base, and contracted into a sharp point: All the feathers of the Wings and Tail being of a green colour: So that it differs little from those small birds, which our Country men call **Citrils*, or those they call *Zifels*, and the *Italians*, *Ligurini*, save that it is a little bigger than either of those, liker in shew or outward appearance to this, something greener than that. So far *Gefner*. Between the Cock and Hen-bird I have observed this difference, that the Breast, Belly, and upper part of the Head, adjoining to be Bill, are more yellow in the Cock than in the Hen. This is common to both Sexes to be fleshy, and not fat. Of its singing the fame *Gefner* hath recorded as followeth. It hath a very sweet and shrill note, which at one breath continued for a long time without intermission, it can draw out sometimes in length, sometimes raise very high, by a various and almost nausical inflexion of its voice, making very pleasant and artificial melody. The sound it makes is very sharp, and so quavering, that sometimes when it stretches and exercises its little throat and Chaps, whistling with all its force, it vehemently strikes, and even deafens the Ears of the hearers with its shrillness. Many are delighted with this kind of its singing, many also are offended, saying, that they are astonished and deafened by it. It is sold every where very dear, both for the sweetness of its singing, and also because it is brought from far remote places with great care and diligence, and but **rarely*; so that it is wont to be kept only by Nobles and great men. But if any one be taken with the melody of these Birds, let him buy those which have long Tails and small Bodies. For it is found by experience that by how much less they are, by so much are they more canorous. But the great ones shut up in Cages turn their heads round about and backward, and are not to be esteemed genuine or right bred *Canary Birds*. Of this sort there are brought from the Islands *Palma* and *C. Verde*, which they call fools, from that motion of their head, which is proper to fools. They are fed with *Canary-feed*, wherein they take great pleasure, which therefore is wont to be brought together with them out of the same Islands. *Gefner* from the relation of his friend writes, that they are fed with the same food with the *Siskin* and *Citril*; viz. Line seed, and Poppy seed, and sometimes also Millet: But particularly, that they delight in Sugar and the Sugar-cane, as also in that sort of Chickweed or Moufe-ear, which they commonly call Henbit. For he affirms, that by this they are presently provoked to sing. This sort of birds is wont to be infested with certain tumours or kernels in its head; which I take to be a kind of *Atheromata*: They are to be anointed with Butter or the fat of Hens till they ripen, then they are to be opened, and the matter dexterously pressed out, and again anointed till they be perfectly whole. Sometimes also they happen to be troubled with Lice: In which case it will be of advantage to sprinkle them often with Wine. For so those Vermine will be killed, and they become stronger to overcome that trouble. Thus far *Aldrovandus*.

There are also found (saith *Olina*) of this sort of birds in the Island *Iloa* a degenerate kind, descended originally from true *Canary-birds*, which were brought over from the *Canary* Islands in a certain Ship bound for *Ligorn*, that was cast away near this Island, and after the shipwreck escaped, and saved themselves in this Island; and afterwards propagated their kind here, breeding and multiplying greatly. But the difference of place hath wrought some change in the external figure of this Bird. For these spurious Birds have black Feet, and are more yellow under the Chin than the genuine *Canary-Birds*.

Additions

Additions to the History of the Canary bird out of a late English Writer concerning singing Birds.

Canary birds (he saith) of late years have been brought abundantly out of Germany, and are therefore now called German birds: And these German birds in handfomness and song excel those brought out of the *Canaries*.

The Cock of this kind is never subject to be fat: For his high mettle, and lavish singing will hardly suffer him to maintain flesh on his back, much less fat.

How to chuse a Canary-bird.

Let him be a long bird, standing straight and not crouching, but sprightly, like unto a *Sparrow-hawk*: standing with life and boldness, and not subject to be fearful. Before you buy him, hear him sing in a single Cage; so you may be sure not to be cheated with a Hen for a Cock, and may please your fancy in his singing. He that hath most variety of notes, and is the longest song-bird is by most accounted the best.

How to know if he be in health when you buy him.

If he stands up boldly, without crouching or shrinking his feathers, if his Eyes look cheerful, and not drowsie; and he be not apt to clap his head under his Wing, these are good signs of a healthful bird: But the surest is to observe his dung; which when he is in perfect health lies round and hard, with a fine white on the outside, and dark within, and will quickly be dry. The larger the birds dung is, I hold it the better, so it be long, round, and hard. A Seed-bird very seldom dungs too hard, except it be very young. If he bolts his tail like a *Nightingale* after he hath dungs; or if his dung be very thin, or if it have only a slimy white, with no blackness in it, the bird is not healthful.

Of the ordering of Canary-birds, which you intend for breeding, in building and breeding.

First, make a convenient Cage, or prepare a room fit for that purpose: You must be sure to let it have an out-let toward the rising of the Sun, where you must have a piece of wire, that they may have egrets and regrets at their pleasure. When you have prepared a convenient Room, then set up in the corners of it some Beloms, either Heath or Frail, opening them in the middle: If the Room be pretty high you may set two or three brooms, one under another; but then you must set partitions with boards over every broom; otherwise the birds will dung upon one another's heads; and also they will not endure to see one another so near each other's Nest, for the Cock or Hen will be apt to fly upon a Hen that is not match to them, when they see them just under their Nest, which many times causes the spoiling of their Eggs and young ones.

2. You must cause something to be made so convenient, and of such bigness as may hold meat for some considerable time, that you may not be disturbing of them continually, and a convenient Vessel for water also. Let your place where you intend to put your seeds be so ordered that it may hang out of the reach of the Mice, for they will destroy all the *Canary* seeds, and so consequently way starve your birds.

3. You must prepare some stuff to build withall of several sorts of things, as Cotton-wool, small dead grass, Elk hair [this is hard to get in England] and earth-moss. You must dry it before you put them together: Then mingle them all, and put them up in a little Net like a Cabbage-net, hanging of it so that they may with convenience pull it out. You must set Peaches all about the Room, and, if big enough, set a tree in the middle, that so they may take the more pleasure. You must proportion your birds according to the bigness of your Room: Rather let it be under-stocked than over: for they are birds that love liberty.

4. When you perceive them begin to build and carry stuff, give them once a day, or in two days at least, a little greens and some Loaf-sugar, for that will cause a slipperiness in the body, that so the Eggs may come forth without injuring the birds; for many times the Hen dies in laying her first Egg: Which will be a great loss, both in losing the first brood, and unpairing the Cock. If this happens, and you have but few

* *Citrillus* or *Citrina*.

* Now adays there be many of them brought over, not are they sold so dear but that even mean persons can afford to buy and keep them.

few pairs in your breeding place, take out the single Cock, and match him, and put him in again: If many, it is advisable to let your Cock alone, till you draw all your birds out to part them; because it will be hard to find out the single Cock, and as hard to take him when found.

5. When you find that they have built, take away the Nets that have the breeding-stuff in them. They breed most usually three times in a year, begin in *April*, and breed in *May* and *June*, and sometimes in *August*, which is not very usual, neither here, nor in *Germany*.

How they breed them in Germany.

First, they prepare a large Room, and build it in the likeness of a Barn, being much longer than broad, with a square place at each end, and several holes at each end, to go into those square places. In those out-lets they plant several sorts of trees, which grow pretty thick, for they will take much delight both to sing and breed in them: And the bottom of the place they strow with a fine sort of sand, and upon it cast seeds of Rape, Chickweed, and Groundfil; which the old bird doth eat, both at time of laying, and also when they have young ones. They put in the house all sorts of stuff for the building of their Nests; and Brooms up and down the corners, one under another, and to the height of the place that is built for the purpose; and make partitions between every Nest, to make them breed the quieter, without disturbing one another: And in the middle of the Room they will set a board edge-ways to darken the light on each side; for no bird almost doth naturally love to have much light come to his Nest. They plant a tree or two, if the house be big enough, one at each end, with many Pearches also along each side of the house, and all along where they make their Nests: The place also that is in the air is full of Pearches. They hang their stuff for building all up and down the house, that the rain come not at it, and strow some on the ground also. Some have fine fountains in those places that are out-lets for the birds to go at pleasure into the air; in which the birds take very much delight to wash and prune themselves.

They seldom take their Nests away to bring them up by hand, as we do here, but they let the old ones always bring them up; and when they are pretty stout, and can crack hard seeds, they have small places for the young to come and feed in; and they give them of all sorts of green seeds to feed upon; and have a kind of trap-door to take them. They say, that if they do not soak seeds for the young ones, very few will live, by reason the Hen is apt to forsake them; and go to Nest again; and the seeds being very hard, they pine away and die.

How to breed and order the young ones taken out of the Nest.

These Birds must not be left too long in the Nest; for if they are, they will be very apt to grow fullen, and will not feed kindly: Therefore take them out about nine or tendays old, and put them in a little basket, and cover them with a Net, else they will be very subject to jump out upon the first opening of the Basket, and if they fall to the ground they will be bruised and die. You must keep them warm for the first week, for they are very tender, and if they take cold will be subject to the cramp, and not digest their meat.

Take them in the Evening, and if you can possibly when the old ones are out of sight; otherwise they will be apt to take distaste when they sit again, and have young ones; and will be apt at every fright to forsake both their Young and Eggs.

Make their meat after this manner. Take some of your largest Rape-seeds, and soak them in water twenty four hours or less, if the water be a little warm I think twelve hours will serve the turn. Drain the water from the seeds, and put a third part of white bread to the seeds, and a little Canary seed in flour, and so mix them all together: Then having a small stick, take up a little at the end, and give every bird some two or three times over; give them but a little at first at a time and often; for if you over-charge their stomachs they will cast up their meat, and seldom thrive after it. For the old ones give them but little at a time, and besides, all the seeds hull and warmed in their stomachs; which lie nothing so hard on their stomachs as seeds that have their skins on. You must not make their meat too dry, for then they will be apt to be Vent-burnt, by reason all the seeds are hot. For I have observed, that the old ones do constantly drink after they have eaten seeds, and a little before they feed their young ones; and they commonly after feeding of them sit a quarter of an hour

hour or more to keep them warm, that the meat may the better nourish them; therefore do you also when you have fed them cover them up warm. I approve best of the nestling bird by reason of his tameness and familiarity with his Keeper; which is the chief pleasure of a bird. For if a bird be not tame, but extraordinarily wild and buckish, there is no pleasure in feeding or hearing of him sing, being apt upon all occasions to bruise himself, and to forsake his singing when most desired.

CHAP. XIII.

The Bird called Citril at Vienna; Verzellino at Rome; in Latine, Thraupis & Citrinella.

IN the shape of the Head and whole body it is very like to a *Linnet*. The Head and Back green: The Rump of a yellowish green: The hinder part of the Head and Neck ash-coloured. [In a bird that I described at *Rome*, the top of the Head, the upper side of the Neck and the Shoulders were particoloured, of a yellowish green and dark brown.] The nether surface of the body is green, but about the Vent it is whitish. The upper part of the Breast and the Belly in the Male birds is of a lovely yellow. The Tail is $2\frac{1}{2}$ inches long, and black, but the extreme edges of the feathers are green. The quill-feathers of the Wings are of the same colour with the Tail: The lesser rows of Wing-feathers green. [In those birds I described at *Rome* the tips both of the quill-feathers, and also of the secondary feathers of the Wings were white.]

The Bill is hard, of a dusky or livid colour, having sharp edges, thicker and shorter than the *Siskins* [yea, in proportion to its body shorter and thicker than the *Linnetts* or *Greenfinches* Bill:] The upper Chap equal to the lower. The Tongue as in *Chaffinches*: The Feet whitish or flesh-coloured, with blackish Claws. The Guts long, slender, and rolled up together.

It is nursed up in Cages for the sake of its singing. At *Vienna* in *Austria* we saw of these birds to be sold, brought out of *Stiria*. It is frequent about *Rome*.

It differs from the *Siskin* and *Serin*, 1. In its ash-coloured Neck: 2. In that the whole nether side of its body is green. 3. That it hath no spots in the sides. *Olina* attributes to it a Tail a little forked; which we also observed in a bird we described at *Rome*.

Belonius esteems this bird to be the *Thraupis* of *Aristotle*, called in French, *Tarin*. It hatches seven or eight Eggs at one sitting.

CHAP. XIV.

The bird called Himgryll at Vienna, Serinus Gesner. Aldrov. lib. 18. cap. 20.

THE Back of this is something red, the middle parts of the feathers being spotted with black, as in the *Yellow-hammer*. The Head is yellow, of a deeper colour in the Males, and paler in the Females. The Rump from green inclines to a lovely yellow. The Breast is of a yellowish green: The Belly white: The sides variegated with oblong, black spots.

The Tail is black, the outmost edges of the feathers being green, consisting of the usual number of twelve feathers. The prime feathers of the Wings are of the same colour with the Tail. The tips of the interior feathers of the second row of the Wing are white; of the other lesser Wing-feathers green.

The Bill is shorter and stronger than in the *Citrinella*, sharp-pointed. The upper Chap something prominent: The Tongue like the *Chaffinches*: The Feet dusky; the Claws black. The like cohesion of the outer and middle toe at bottom as in other small birds. The Guts are small, and have many convolutions.

These Birds also are kept in Cages for their singing: We saw of them to be sold at *Vienna* in *Austria*, brought out of *Stiria*. This little bird (saith *Gesner*) for its rare musical singing is preferred before all others of this kind, even the *Citrinella*.

The *Siskin*, *Citrinella*, and *Serinus* agree, 1. In having yellow Rumps: 2. That they are canorous: 3. That they have greenish yellow Breasts, and 4. Long, slender Guts.

The *Serinus* and *Citrinella* agree in the colour of the Tail and Wings. The *Siskin* and *Serinus* in their spotted sides and white bellies: The *Siskin* and *Citrinella* in having a green back; but in the *Siskin* the shafts of the feathers are black.

This Bird grows very tame and gentle (as *Gesner* reports) and will live many years [thirteen or fourteen] shut up in a Cage.

* The *Brazilian Teitei*, which they call also *Guiranhemgeta* and *Guraundi*, *Marggrave*.

It is a small bird, of the bigness of a *Robin-red-breast*. It is kept in Cages for a singing bird, but it only chirps like a *Redstart*, [*Rubrica*] called by the *Germans*, *Gimpel*. It feeds upon *Paco* and *Mamao*. It hath a short, thick, black Bill. The Head, upper side of the Neck, Wings, whole Back and Tail are invested with black feathers, with which something of blue is mixt, so that they shine like polished Steel. The Throat, lower side of the Neck, the Breast, the whole lower Belly and Thighs are yellow. At the rise of the upper Bill behind the Nostrils it hath a spot of yellow feathers. The Legs and Feet are of a dusky colour. And this is the Cock.

The Hen in proportion of body and magnitude agrees exactly with the Cock; hath the same Bill and Legs: But differs much in colour. For it is green like the *Acanthis*, called by the *Germans*, *Zyzeben*. The Wings and Head with the upper side of the Neck are somewhat dusky, with blue mingled. These birds delight to live together five or six in a Cage.

CHAP. XV.

The *Anadavad Bird*, brought from the East Indies, having a Finches Bill and Larks Claws.

IN bigness it scarce exceeds the *Golden-crown'd Wren*. Its Bill is for shape like a *Goldfinch* or *Chaffinch*; for colour red, the upper Mandible above being black. The upper side of the body is of a dusky colour, in some birds lighter, in others darker; only the feathers growing about the Rump are of a scarlet or deep Orange. The quill-feathers of the Wings and those of the Tail are black. The Tail itself is an inch and half long, made up of twelve feathers; the middlemost being the longest, and the exterior in order shorter. The quills and covert-feathers of the Wings are spotted with small round white spots, scattered up and down in no order, in some birds more, in some fewer. In some birds the upper part of the Breast is of a scarlet red, in others it is wholly black, as is the rest of the Breast and Belly in all. In one Bird, which was paler than the rest that we saw, and almost of the colour of a *Robin-red-breast* on the Back, not only the Wings, but also the side-feathers, and those scarlet ones incumbent on the Tail were marked with white spots. The Legs and Feet are white: The Claws very long, like those of *Larks*, but more crooked. The figure of the body is rather long than round.

In the year of our Lord, 1673. I saw many of these birds (in the house of a certain Citizen of London) that had been brought out of the East Indies, kept all together in the same Cage: Being introduced by my worthy friend *Thomas Allen*, Doctor of Physic, who also gave me the first notice and information of them.

CHAP.

CHAP. XVI.

A Bird called by the *Bolognese*, *Petronia Marina*, by * *Aldrovand*, *Oenanthe* * *Lil 17. cap 38.*
congener.

THE length of this Bird, taken from the tip of the Bill to the end of its Claws, was little less than seven inches: Its breadth between the extremes of the Wings distended twelve and a quarter. Its Bill strong, sharp-pointed, like that of a *Chaffinch*, from the tip to the angles of the Mouth somewhat more than half an inch long: The upper Chap black, the lower about the angle yellow. The angle itself is round: The sides of the Bill sharp-edged. The Head is of a dusky ash-colour, but for the most part through the middle of the crown is a line drawn of a whiter colour. The Neck is ash-coloured. Below, between the Shoulders the feathers have their outer edges of a pale ash-colour, their inner black. The Rump from dusky inclines to green, but the tips of the feathers next the Tail are white. The prime feathers in each Wing are in number eighteen, of which the first or out-molt is shorter than the second, the second equal to the third, and longest of all. These three feathers are of a dark brown or blackish, only their outmost edges of a pale green. The second, third, and fourth rows of Wing-feathers have white tips, but else are black. The Plumage on the bale or ridge of the Wing is of a fordid green. The feathers covering the under side of the Wing are white. The Breast is of a fordid white. The feathers next the Tail have pale yellow tips, else they are brown. The Tail is two inches and an half long, and made up of twelve feathers.

This sort is distinguished from all other small Birds, 1. That it hath a very fair, lovely, yellow spot about the middle of its Throat. 2. That all the feathers of the Tail on the interior Web near the tip are marked with one great round white spot, being else all black, save the edges, which are greenish. The outer half of the out-molt feather on each side is also white. 3. It is distinguished from the *Hortulane* by a most certain note, that its Bill is far bigger, and stronger, and equal to a *Greenfinches* Bill.

We saw many of these Birds at *Bologna* in Italy to be fold. The Bird which *Aldrovandus* saith is called *Petrone* at *Bologna*, and *Petruncello* at *Genoa*, and describes under the title of * *Alauda* congener, seems to be no other bird than the *Emberiza alba* * i.e. a bird of *Gesner*, or our *Bunting*, as will appear to him that shall take pains to compare the *Lark* descriptions.

CHAP. XVII.

The *Hortulane* kind, whose characteristic is a hard knob in the upper Chap of the Bill.

§. I.

The *Bunting* called by *Gesner* *Emberiza alba*. I take it also to be the *Calandra* of *Aldrovand*, and *Belonius*, moreover the *Alauda* congener of *Aldrovand*, and the *Cenchramus* of *Belonius*: The *Strillozo* of *Olinia*.

IT weighs about an ounce and half: Its length from the tip of the Bill to the end of the Tail was seven inches and a quarter, and so much to the end of the Claws. Its breadth between the tips of the Wings spread eleven inches and an half. Its Bill is great and thick, having a hard knob or eminency in the upper Mandible or Palate, wherewith it is thought to bruise Wheat, Oats, and other Grain. The sides of the lower Chap rise up in an angle on each side, [as may be better represented by a figure than exprest in words] and incline to one another under the Tubercle of the Palate. The Tongue is sharp, and slit in two. The Claws are of a pale dusky colour. The back-toe is great, armed with a lesser and more crooked Claw than in *Larks*. The outmost fore-toe is equal to the inmost, and grows fast to the middle-

Mm 2 middle

most at bottom, as in other birds. This birds Head somewhat resembles a *Rail*. The colour of the whole body testaceous or earth-like. The Chin, Breast, Belly are of a yellowish white. The Throat hath oblong, black spots. The quill and covert-feathers of the Wings are dusky, having their outer edges cinereous. The Back (as we said) of a testaceous colour, the middle parts of the feathers being blacker. The Neck beneath the Head behind is ash-coloured. The shafts of the Head-feathers are of a dark brown; the outskides or edges being of a reddish ash-colour. The Tail is more than three inches long, of a dusky red colour, without any whiteness, save that a kind of dark shadow or appearance of white may be discerned in the outmost feathers. It sings sitting upon the highest twigs of trees and shrubs. It feeds upon Corn.

Both the figure and description of the Bird called *Strillozo* in *Olinia* agree exactly in all points to our *Bunting*, save only that he attributes to it the bigness of the common *Lark*, than which our *Bunting* is something bigger. I my self also, when I was at *Rome*, saw and described a small bird called *Strillozo*, somewhat less (as it then seemed to me) than the common *Lark*. Seeing therefore *Olinia* besides the *Strillozo* describes also the *Calandra*, making it somewhat bigger than the common *Lark*, and not much less than a *Thrush*, I do suspect that the *Calandra* is the same with our *Bunting*, and the *Strillozo* a different kind of bird, described by none besides him, at least clearly and exactly.

The description of the *Alandæ* congener of *Aldrovand* agrees exactly to this Bird, so doth also that of the *Cenchrus* of *Belonius*, so that of one bird *Aldrovandus* makes four, giving us the *Bunting* under the title of 1. *Emberiza alba*: 2. Of *Alandæ* congener: 3. Of *Cenchrus Belonii*: 4. Also (if we be not much mistaken) of *Calandra*; all which he exhibits for distinct species.

§. II.

The *Yellow-hammer*, *Emberiza flava* of *Gesner*; *Hortulanus* of *Belonius*; *Luteæ* alterum genus of *Aldrovand*; *Chloreus* seu *Lutea* *Aristotelis* of *Turner*.

It is equal to a *Chaffinch*, or a little bigger; weighs $1\frac{1}{2}$ ounce: From the tip of the Bill to the end of the Tail is six inches and an half long; to the end of the Feet but six. Its Bill is of a dark dusky colour, half an inch long, having a hard knob in the upper Chap to break the grains of corn, and the sides of the nether Chap turned inwards, and bent together, like the *Buntings*. The Tongue shorter than is usual in other birds, not reaching beyond the knob, its tip horny and sharp, slit into filaments. The Eyes hazel-coloured: The Feet of a horn colour; the Claws black. The like cohesion between the outmost and middle toe at the bottom, as in other birds.

The Throat and Belly are yellow: The Breast hath something of red mingled with it, as also the sides under the Wings. The Head is of a greenish yellow, spotted with brown. Above the Shoulders in the lower part of the Neck is a certain colour between green and cinereous, or compounded of both. The middle parts of the covert-feathers of the Back and Shoulders are black, the edges from green incline to red. The Rump is reddish.

The Female is all over paler, less yellow on the Head, less red on the Breast and under the Wings.

The quill-feathers of the Wings are dusky, having their exterior edges from green inclining to a fordid white. The Tail is three inches long, composed of twelve feathers, something forked, of a brown colour; the middle two having their edges on both sides, the rest only their outside-edges green. The two outmost on the inside the shaft near the tip are marked with a white spot cutting the feather obliquely.

It hath a *Craw* and a muscous Stomach or *Gizzard* like the granivorous birds. It hath also a Gall-bladder. The blind guts, as in almost all small birds, are very little and short. These birds build upon the ground, being every where in *England* most common.

§. III.

§. III.

Aldrovandus his first sort of *Yellow-hammer*, which he calls *Cirlus*: *Zivolo* of *Olinia*.

It is of the bigness of a *Sparrow*; hath a short thick Bill. The Breast and Belly are yellowish, sprinkled with brown spots. The Head, Back, Wings, and Tail from testaceous inclining to a brown or dusky colour: but in the Tail there are two feathers on each side partly white, and partly of the same colour with the rest. Between the Male and the Female there is this difference, that the Male hath more yellow about him than the Female, especially in the upper part about the Eyes, and in the Throat, and under the Neck on the sides, where are seen good large spots of yellow, which are wanting in the Female. It abides for the most part on the ground, seeking its food there of Seeds, and other things, and therefore when it is new taken it is wont almost always to have its Bill dirty. Whether this Bird be specifically distinct or no from the precedent I am not fully satisfied; but because both *Aldrovandus* and *Olinia* make it distinct, I would not omit it.

Olinia calls it *Zivolo*, from its note *Zi zi*, which it often ingeminates.

§. IV.

The *Reed-Sparrow*. *Passer torquatus* in *arundinetis* nidificans. *Perchance* the *Passer arundinaceus* of *Turner*.

It is bigger than the *Linnet*, equal to the *Chaffinch*. The Cock weighed three quarters of an ounce: Was from Bill-point to Tail-end six inches and an half long: Broad between the extremes of the Wings spread ten inches. The Bill short, black [Mr. *Willughby* makes the upper Mandible black, the nether whitish] like the Bill of the *Hortulane*, [Mr. *Willughby* compares it to the *Chaffinches* Bill,] the lower Chap having its edges on both sides bent inwards, is hollow in fashion of a Funnel, and contains the Tongue within it. Besides, near its base it rises up into a dent or angle on each side, to which there is a notch or furrow correspondent in the upper Chap to receive it, as in the *Buntings* Bill. The Head is black: The Cheeks about the Eyes red. A ring of white encompasses the Neck, which on each side is stretched forth to the corners of the Mouth. The Chin and Throat are black: The Breast and middle of the Belly white. The Back and covert-feathers of the Wings are particoloured of red and black; viz. the middle part of each feather black, the outskides red. The Rump red, with a mixture of ash-colour. The quill-feathers of the Wings are dusky, having their exterior edges red. The tips of the seven first or outmost are sharp, of the rest blunt, indented, and of an ash-colour. The lesser rows of Wing-feathers have their outer edges and tips red, being else of an ash-colour. The Plumage on the base or ridge of the Wing bluish, underneath the Wing white: The Tail is two inches and an half long, and made up of twelve feathers, of which the two middlemost are something shorter than the rest, and black, their outward edges red: The three next on each side were dark coloured, and almost black. The exterior edge of the fifth is white: The interior also not far from the tip is spotted with white. The outmost feather is wholly white. All end in sharp points.

The Feet from flesh colour decline to black. The Claws are black: The outmost and middle Toe joyned at bottom. The back-toe great and strong. The blind guts short and thick. It hath a Gall-bladder. The Stomach is muscous: In it opened we found seeds, &c.

The Hen, as in most Birds, is not so fair-coloured. The ring about her Neck is darker, and scarce appearing. The Head, Back, Shoulders, and covert-feathers of the Wings are particoloured of black and dirty red; viz. the middle parts of the feathers are black, and the outskides red. At the base of the Wing are red feathers. The Throat is particoloured, of red, black, and cinereous.

§. V.

p. V.

The Hortulane of the Italians. Hortulanus Aldrov. Tordino Berluccio at Venice.

IT is equal and very like to the *Yellow-hammer* [That which I J. R. saw and described at *Florence* seemed to me somewhat less, and longer-bodied.] The Hen measured from Bill to Tail exceeded seven inches length; being in our usual way of measuring ten and an half broad. Its Bill was short, viz. from the tip to the corners of the Mouth scarce half an inch long, thick at base, sharp at point; of a red or flesh colour in the Cock. In the Hen the upper Chap is black, the lower blue. The knob on the upper Chap is much less than in the *Yellow-hammer*. The sides of the Bill are sharp. The upper Mandible hath on each side an angle or furrow impressed, to which answereth a tough or angular eminency in the lower, as in the *Bunting*, the figure whereof for the clearer apprehension and understanding of what we say is to be viewed. The Feet are of a pale dusky: The Claws black. [In the Cock the Legs are reddish.] The back-toe is great. The inner and outer fore-toes are of equal length. The outmost from the bottom to the first joint sticks fast to the middlemost without any membrane intervening, as in most small birds. The Throat and Breast are ash-coloured, the rest of the underside to the very Tail is red. The Rump of a deeper red. The Head of a brown or dusky ash-colour, the middle parts of the feathers being black: As they are likewise on the Back, having their edges of a reddish ash-colour. [In the Cocks the Breasts are more red.] Under the Bill is a yellow spot. The Head is of a colour mingled of green and cinereous: The middle parts of the Back-feathers are black, the edges of a colour mingled of red and cinereous, or red and green; the Rump is green.

The quill-feathers of the Wings, as in almost all small birds, are eighteen in number, of which the greater have their edges of a greenish white, the lesser or interior of a red. The tips of all the feathers of the second row have their tips white, and exterior edges red. The tips of the third row are also white. The edges of the lesser coverts are cinereous. The Tail is almost three inches long, and made up of twelve feathers: Of which the middle and outmost are something shorter than the rest. For colour the two middlemost are of a dark brown, with red edges: The three next on both sides black: The outmost but one have the upper half of their interior Webs white. The outmost have more white on the interior Web, and some also on the exterior. The Gall-bladder is little, and the Gall within yellow.

It is very like our *Reed-Sparrow*, with a white ring about its Neck, yet differs manifestly from it in some marks, so that there is no doubt but it is a distinct kind. 1. In its place, this abiding chiefly among Reeds: Whereas the *Hortulane* frequents Gardens especially, as the name imports. 2. In colour: The *Hortulane* being more red, and wanting the ring about the Neck, which this hath: And besides, having a yellow spot under the Throat, which this wants.

* *Aldrovand* sets forth six kinds or varieties of this bird. 1. The first was all yellow, almost of a straw-colour, excepting the ridges of the Wings, and tips of the quill-feathers, which were white. 2. The second was all over white. 3. The third, called also by the Fowlers a *Hortulane*, is indeed a bird wholly of the shape of a *Hortulane*, but something different in colour. Its Head from cinereous inclined to yellow: Its Neck was cinereous, but speckled with black: Its Belly, Legs, and Feet yellow. The ridges of the Wings and the quill-feathers white; the other parts partly black, and partly cinereous. The whole Tail brown, but yellow on the sides. 4. The fourth had a green Head and Neck; a red Bill; ash-coloured Legs; else it was black. Yet hath it on the crown of the head, and also in two of the quill-feathers only an oblong white spot. 5. The fifth I may call a *white-tail'd Hortulane*: For its Tail was white, else it was like the common *Hortulanes*, but in all parts paler. 6. The last some of our Fowlers reckoned a kind of *Spipola*, others a kind of *Hortulane*; and indeed I should make it congenerous rather to the *Spipola* than the *Hortulanes*. For its Bill is longer, and its Legs and Feet dusky, which in the *Hortulanes* are wont to be yellow. Its whole body also is dusky, the Breast only and ends of the Wings being white.

p. VI.

* A Bird called by * *Aldrovand*, *Cirlus stultus*.

* *Ornithol.*
lib. 18. cap. ult.

IT is equal in bigness to the *Yellow-hammers* above described of the same make and habit of body, the very same figure and shape (though it differs in colour.) It will also willingly fly to, and company with them shut up in Cages, as to birds of its own feather: And besides, it constantly no less than they, as well flying as resting, ingeminates this word *Ci, Ci*. Whence also in some places, as at *Genoa*, it is not undeservedly called *Cia*, or for distinction sake, *Cia selvatica*, or *Cia montanina*; and by our *Bolognese*, *Cirlo matto*. The upper part of the Head behind, and all the Back are adorned with a * ferrugineous colour, distinguished with pretty large black spots. * *Rully*. From the Bill over the Eyes to the end of the Neck is extended an ash-coloured line tending to white. The Breast and all the Belly are wholly taken up with a ferrugineous colour. The prime feathers of the Wings and Tail are blackish, yet their outmost borders terminate in a ferrugineous colour. Besides, the Wings have some white spots. In the Tail are one or two feathers on each side, partly blackish, and partly white.

We have subjoined this Bird to the *Yellow-hammers* and *Hortulanes*, to which it is of kin; though whether or no it properly pertain to this Family, the figure of the Bill being omitted in *Aldrovand's* description we cannot certainly determine.

THE

THE
THIRD BOOK
OF THE
ORNITHOLOGY
OF

FRANCIS WILLUGHBY Esq;

Of Water-Fowl.



Water-fowl are either *Cloven-footed*, which are much conversant in or about waters, and for the most part seek their Food in watery places. [Almost all these have long Legs, naked or bare of feathers for a good way above the Knees, that they may more conveniently wade in waters] or *Whole-footed*, which swim in the water, and are for the most part short-leg'd.

Those that live much about waters are either, first, of great size, the biggest of this kind, having each something singular, and being not reducible to any other tribe, which therefore as straglers and anomalous birds we have placed by themselves, though they agree in nothing but their bigness: Or secondly, of lesser size. These lesser are either * *Piscivorous*, or such as suck a nourishing fat juice or moisture out of muddy and boggy ground, or † *Insectivorous*. The *Piscivorous* are *Hérons*, *Storks*, &c. The *Limosa* † That feed upon fish. The *Limosa* † That feed on insects. or *Mud-suckers* may be distinguished by their Bills into such as have very long Bills, either crooked, as the *Curlew*, or straight, as the *Woodcock*. The *Insectivorous* Water-birds have either Bills of a middle size for length, as the *Himantopus*; or short Bills, as the *Plover*, *Lapwing*, &c.

We call those Birds *Mud-suckers*, which suck out of the Mud or Channels some oily slime or juice, wherewith they are nourished: Whence they have delicate flesh, and their very guts not emptied or cleansed from the Excrements are usually eaten. These have very long Bills for this purpose, broad near the tip, and finely chamfered or wrought with lines: Speckled bodies; two toes somewhat joyned; all broad, that they may not easily sink as they walk upon muddy and boggy grounds.

But because we are not so skilful, as that we can certainly determine what Birds belong to each of these kinds, we shall chuse rather to distinguish Cloven-footed Water-fowl, not *Piscivorous* by the different length of their Bills, into three kinds. The first shall be of those that have the longest Bills, whether straight, as the *Woodcock*, &c. or crooked, as the *Curlew*, &c. The second of such whose Bills are of a middle length, as the *Himantopus*, &c. The third of short-bill'd birds, as the *Plover*, *Lapwing*, &c. Those we call long-bill'd, whose Bills exceed two inches and an half length: those middle-sized, whose Bills are of any length between two inches and an half, and one and an half: Those short-bill'd, whose Bills exceed not an inch and half.

Most Water-fowl have a short Tail; none of them have their Feet so disposed as *Woodpeckers* and *Parrots*, that is two forward, and two backward; none having more than one back toe. Among Water-fowl of all kinds those that feed upon fish have the ranker and stronger-fenced flesh.

THE FIRST PART.

Of Cloven-footed Water-fowl; wading in Waters, or frequenting watery places.

THE FIRST SECTION.

The greatest Cloven-footed Water-fowl of a singular kind.

CHAP. I. § I.

The Crane: Grus, Ἰζαῖος Græcis.

THis is a large-bodied Fowl, weighing sometimes ten pounds. Measuring from the beginning of the Bill to the end of the Tail it is well nigh five foot long. That it hath a very long Neck is so well known that it is needless to write it: Its Legs also are very long.

Its Bill is straight, sharp-pointed, of a dark greenish colour, near four inches long, compressed side-ways: Its Tongue broad and horny at the tip. The top of the Head black; from the Bill to the hinder part covered with black hairs or bristles rather than feathers. On the back of the Head it hath a space or bed of the figure of a Crescent, bare, or thin set with hairs, and of a red colour: Below which, on the upper part of the Neck is a triangular spot of ash-coloured feathers. Two white lines or strokes, one from each Eye, are produced backwards, and meeting behind the Vertex of the now mentioned triangular spot, are thence continued as far as the Breast. The Throat and sides of the Neck are of black hue. The Back, Shoulders, covert-feathers of the Wings*, Breast, and all the Belly and Thighs are ash-coloured; only the quill-feathers of the Wings, and those on the utmost Pinion are black.

* Excepting those on the utmost joint.

The Wings are very large: The quill-feathers are in number twenty four, and (as we said) black, yet the lesser of them from black incline to red or russet, as do also the primary covert-feathers which are on the utmost joint or Pinion. The Tail for the bigness of the bird is small and short, round when spread, consisting of twelve feathers, all cinerous, with black tips.

The Legs are black, bare of feathers for an hand breadth above the Knees: The Toes black, and very long. The lower joint of the outmost and middle Toe connected by a thick membrane.

But that which is most rare, and especially remarkable, yea, wonderful in this bird, is the conformation of the Wind-pipe. For entering far into the Breast bone, which hath a great cavity within to receive it, and being there thrice reflected (as the figure adjoining to the sculp of the Crane represents) goes out again at the same hole, and so turns down to the Lungs,

The blind guts are five inches long. The Stomach or Gizzard musculous as in granivorous birds. The flesh is very fatty and well-tasted, not to say delicate.

We saw many Cranes to be sold in the Poulterers shops at Rome in the Winter time, which I suppose had been shot on the Sea-coast.

They come often to us in England: And in the Fen-Countries in Lincolnshire and Cambridgehire there are great flocks of them, but whether or no they breed in England (as *Aldrovandus* writes, he was told by a certain English man, who said he had often seen their young ones) I cannot certainly determine either of my own knowledge, or from the relation of any credible person. The delicate taste of the flesh and the musculous Stomach are sufficient arguments to evince, that this bird feeds not at all upon fish, but only upon herbs, grain, and seeds of divers sorts, and it is likely upon Insects too: As the Authors also that have written of it unanimously report.

Cranes differ from Herons, 1. In that the Claw of the middle toe is not ferrate as in Herons: 2. In bigness, wherein they exceed them: 3. In having a shorter Bill: And 4. a musculous stomach or Gizzard: 5. Two Appendices or blind guts, whereas Herons have but one: 6. In the strange revolution of the Wind-pipe within the Breast-bone.

§. II.

§. II.

The Indian Crane.

THis is lesser than our common Crane, but of the same ash-colour. Its Tail is short, and scarce conspicuous, being hidden by the Wings. Its Bill is straight, narrow, and longer in proportion than the Bill of the common Crane: Its Nostrils oblong. The chief difference is, that in this the top of the Head from the Bill to the Crown is bare of feathers [only set with thin hairs] rough-skinned, and of a red colour. This we saw among his Majesties rare Birds kept in St. James's Park near Westminster.

§. III.

The Balearic Crane: Grus Balearica Aldrov. Pavo marinus Clus.*

* Exat. lib. 5; cap. 11.

FOR the shape of its body it is like to a Stork: Yet its Bill is shorter not only than a Stork, but than a Crane. It hath upon its Head a thick, round Crest, made up of Bristles spread every way, like to Hogs Bristles, of the colour of the prickles of a common Hedgehog: By which note it may at first sight be easily known and distinguished from all other birds. In both Cheeks it hath a white spot terminated above with a red line: The lesser quill-feathers of the Wings are white: the whole Bird besides is black, of the colour of a Coot, the Tail not excepted. Under the Bill hangs down a red* excrescence on each side like a Gill or Wattle. The Legs are long, bare of feathers from the knees upward almost to the second joint. We saw a bird of this kind in the Royal Aviary in St. James's Park near Westminster.

* Or Lobe of flesh.

Aldrovandus his description, which he took from a Picture he saw of this Bird, differs in some particulars from ours: For 1. He makes the bristles of the Crest of a* Gold colour: 2. All the under side of a dusky ash-colour, the Back of a dark green, as in *Lappings*: 3. He mentions some ferrugineous feathers in the Wings.

* Clusius makes them also of a yellow colour.

These Birds are found in the Country near *Capo Verde*. For bigness they may match our Country Cranes. As they run they stretch out their Wings, and so run very swiftly, otherwise they walk softly. They never roost in houses, but about night when they have a mind to go to their rest, they search out high Walls whereon to perch, after the manner of Peacocks, whose voice and conditions they also imitate. They feed upon green herbs, and together with Hens and Peacocks devour Barley and other grain. This out of *Aldrovandus*.

In the Tables of Birds, engraven by *Visscher*, it is figured by the title of *Struthio ex China*, i. e. *A China Ostrich*.

CHAP. II.

** Marggraves Jabiru of the Brasilians, called by the Low Dutch, Negro.*

THis Bird in bigness exceeds a Swan. Its body is fourteen inches long; its Neck as many, and of the thickness of a mans arm. Its Head sufficiently great; its Eyes black; its Bill also blackish, extended straight forward, and above toward the point a little bending, eleven inches long, two and an half broad, edged* *versus exteriora*: The upper Chap of the Bill is a little higher [or deeper] and bigger than the nether. It hath no Tongue: under the Throat is a Crop of a moderate bigness. The Legs are very long, viz. two foot. For the upper Legs [or Thighs] are one foot and an inch long, and half way bare of feathers; the lower eleven inches: These are straight, black, and as it were scaled, half an inch thick. In each foot are four toes, three standing forward, and one backward, as is usual in most birds. The whole bird all over is covered with white feathers like a Swan or Goose. The whole Neck almost, viz. for eight inches length, counting from the Head, is destitute of feathers; and one half of this bare part, together with the Head, is covered with a black skin, the other half with a white. But I suppose the feathers had been plucked off, and that the white down stuck in the skin. The Tail is broad, ending with the end of the Wings.

* I do not well apprehend our Authors meaning in these words, there-fore I have put them down in the margin.

N n 2 CHAP.

CHAP. III.

* Jabiru guacu of the *Petiguaves*, Nhandu apoa of the *Tupinambi*, Scurvogel of the *Low Dutch*.

It hath a great Bill, seven inches and an half long, round at the end, and bending downward. It wants the Tongue, and the lower Bill is grey. On the top of the Head it hath a bony Miter or Crown, of a colour mixt of white and cinereous. The Eyes are black, and behind them large Ear-holes. The Neck is ten inches long, the upper half whereof, together with the Head, is not covered with feathers, but with a scaly ash-coloured skin, whose scales are white. In bulk of body it equals a *Stork*: It hath a short, black Tail, reaching no further than the ends of the Wings. The upper Legs [or Thighs] are covered partly with white feathers, else the whole Legs are ash-coloured; the upper being eight inches long, the lower six, or a little more. There are four Toes in each foot, so disposed as in the former. The whole Body and Neck are covered with white feathers. Long feathers hang down from the Neck and about it. The Wings are white; their quill-feathers black, with a gloss of a Ruby colour. They flay the skin off this bird, and eat the flesh boiled or roasted. It is fat, dry, and well-tasted, especially if it be fried with butter. I have eaten of it often.

CHAP. IV.

The Braslian Cariama of Marggrave.

This is a Water-fowl of the bigness of the greater *Heron*. On its Head above the rise of its Bill it carries a crest or tuft of feathers, standing upright, of a black mingled with an ash-colour. The Bill is short, the upper part a little hooked, brown, with a tincture of dark yellow. It hath elegant golden Eyes, with a black Pupil, and long, black Eye-brows. The Wings end a little behind the rise of the Tail. It hath long Legs, above covered half way with feathers, else naked, and of a dark yellow colour: Three Toes in each foot, the middlemost the longest, the outer shorter than that, and the inner the shortest; connected partly by a skin intervening. Behind, or on the backside the foot it hath a small Toe, set higher than is usual, and a round heel like an *Ostrich*. The Claws are short, hooked, dusky. The whole Body is covered with grey or ash-coloured feathers, waved with brown, as in *Falcons*, and a dark yellow intermingled. The ends of the Wings and Tail are brown, waved with a dark yellow and grey. In the Breast and lower Belly it hath more grey. It carries its Tail low, its Neck high. Its cry is like a *Hen-Turkeys*, and is heard afar off. It is very good meat.

CHAP. V.

The Braslian Anhimia of Marggrave.

It is a Water-fowl of the rapacious kind, bigger than a *Swan*. Its Head is not great, like a *Hens*; its Bill black; the upper Chap whereof is something longer than the nether, and turning downward at the tip. It hath fair, golden Eyes, with a black Pupil, and a black circle without. On the Head near the rise of the Beak it carries an erect horn, bending forward at point, a little more than two inches long, of the bigness of the greater string in a base Viol; round as though it were turned, of a white or bone colour. About the horn stand up very fine, short, black and white feathers. Its Neck is seven inches long, the rest of its Body to the rise of its Tail almost a foot and half. It hath very large Wings; the greater feathers being above a foot and half long. In the forepart of each Wing are two straight triangular * horns, springing from the very bone of the Wing, as thick as the tip of ones little finger, and

and of a Conical [more properly Pyramidal] triangulate figure. The foremost of these goads or spurs are an inch long; the hindmost a little shorter, and of a dusky colour. It hath a Tail ten inches long, and broad like that of a *Goose*. The upper Legs [Thighs] are four inches long, and for the lower half bare of feathers. The lower Legs are five inches long, and almost two thick. In each foot it hath four toes so situate as in *Hens*: The middle of the three fore-toes is four inches and an half long; the other two three and an half; the back-toe almost two. Each hath a crooked, black Claw an inch long, but the back toes a little longer. Both Feet and Legs, as far as they are naked, are covered with a brown scaly skin. The crown of the Head is variegated with black and white feathers. The sides of the Throat and upper half of the Neck are black. The lower half of the Neck and Breast are variegated with white, cinereous, and black feathers. The lower Belly is all white. On the sides under the Wings, and on the Back the Plumage is black, white feathers being here and there intermingled. The Tail is black: The Wings also are black, excepting the outmost borders (near the bones) where they are covered with yellowish white feathers. It hath a terrible cry, sounding something like *Vyhu, Vyhu*. It is never found alone, but always a pair, Cock and Hen, walk together, and when one is dead, the other never departs from its carcass. The horn that grows on its Head is held to be a remedy against poyson, being infused a whole night in Wine. The same is reputed a remedy against the suffocation of the Womb, and in hard travel. This that I described was a *Hen*: The Cock is of twice the bigness. It makes its Nest of clay by the bodies of trees upon the ground, of the shape of an Oven. Thus far *Marggrave*. This is a bird of a singular kind, none like it: Perchance it may be the *Cuntur*, so much talked of. Here we may note by the by, that these spurs in the Wings are found only in some *American* birds, but in none of our Continent.

BOOK III. PART I. SECTION II.

Of Cloven-footed Piscivorous Water-fowl.

These have very long Necks: Their Bills also are long, strong, ending in a sharp point, to strike fish, and fetch them from under stones or brinks: Long Legs to wade in Rivers and Pools of water: Very long Toes, especially the hind-toe, to stand more firmly in Rivers: Large, crooked Talons, and the middle ferrate on the inside, to hold Eels and other slippery fishes the faster, or because they sit on trees; lean and carrion bodies, because of their great fear and watchfulness.

The *Heron*-kind is distinguished from all other tribes of birds by this most certain note, that they have but one single blind gut a-piece, after the manner of *Quadrupeds*; whereas all other birds known to us have twain.

CHAP. I.

Of Herons.

§. I.

The common Heron or Heronflaw: *Ardea cinerea* major five Pella.

The Female (which I described) weighed almost four pounds: Being from the tip of the Bill to the end of the Claws four foot long, to the end of the Tail thirty eight inches and an half.

The foremost feathers on the crown of the Head were white, then succeeded a black crest four inches and an half high. The Chin was white. The Neck being white and ash-coloured was tintured with red. The Throat white, being delicately painted with black spots; and on its lower part grew small, long, narrow, sharp, white feathers. The Back (on which grows nothing but down) is covered with those long feathers that spring from

* Spurs they may more properly be called,

from the Shoulders, and are variegated with whitish strakes or lines tending downwards. The middle part of the Breast, and lower part of the Rump, viz. that underneath the Tail inclines to yellow. Under the Shoulders is a great black spot, from which a black line is drawn to the Vent.

The prime feathers of the Wings are about twenty seven in number, the last of which are ash-coloured, all the rest black, excepting the outer edges of the eleventh and twelfth, which are somewhat cinereous. The undersides of all of them is cinereous. The feathers of the bastard Wing are black. Under the bastard-wing is a great white spot. Also white feathers cover the root of the bastard wing above. Then a white line is continued all along the basis or ridge of the Wing as far as its setting on. Ten of the second row of Wing-feathers are black, then four or five have their exterior borders white: All the rest are ash-coloured. The Tail also is ash-coloured, seven inches long, and made up of twelve feathers.

Its Bill is great, strong, straight, from a thick base gently lessening into a sharp point; from the tip to the angles of the Mouth five inches and an half long, of a yellowish green colour. The upper Mandible is a thought longer than the nether, and therein a furrow or groove impressed, reaching from the Nostrils to the utmost tip. Its sides towards the point are something rough, and as it were serrate, for the faster holding of slippery fishes. The lower Mandible is more yellow: The sides of both are thinned into very sharp edges. The Mouth gapes wide. The Tongue is sharp, long, but not hard. The eye-lids, and that naked space between the Eyes and Bill, are green. The Nostrils are oblong narrow chinks.

The Legs and Feet are green: The hind-part of the Legs and soles of the Feet greener. The Tocs very long. The outmost foretoes are joyned to the middle by a membrane below. The inner edge of the middle claw is ferrate, which is worthy the notice taking.

Its Stomach is large and flaggy, rather membranous than muscular, as in carnivorous birds, in which dissected we found * *Icy-leaved Duckweed*. The Guts towards the Vent, where the blind guts are situate, are larger than in other birds. It hath not two blind guts, one on each side, like other birds, but only one, like Quadrupeds, but that bigger and thicker than ordinary. The Gullet under the Chin is dilated into a great wideness. In the middle of the Merry-thought is an *Appendix*. It hath a long Gall-bladder. *Gesner* counts but eleven Vertebres in the Neck; I observed fifteen, of which the fifth hath a contrary position, viz. is * reflected upward. It feeds upon Fishes, Frogs, &c. Oftentimes also it strikes and wounds greater fishes than it can draw out and carry away. Young *Heron*s may be fattened with hush guts and entrails, fish, &c. It sits sometimes with its Neck so bent up, that its Head is drawn down to stand between its shoulders.

These Birds build sometimes on the tops of great trees, and for the most part many together. But whether they are wont to build in old *Rooks* Nests, as *Aldrovandus* out of *Polydore* relates, I leave to further enquiry.

We have *Heronics* in *England* such as they have in *France*, however *Belonius* denies it: In which *Heron*s are so well instructed and accustomed to breed, that the owners make yearly a good profit of the young.

§. II.

Aldrovandus his third sort of ash-coloured *Heron*.

THIS *Heron* which I make congenerous to the common cinereous, from the tip of the Bill to the end of the Feet was thirty six inches, or four foot long: Had a Bill an inch thick, of the length of a * Palm; near the Nostrils of the breadth of ones little finger, channel'd within; beneath of a horn and rose colour. The *Iris* of the Eye yellow, the Pupil black. The Neck was a full span long. The feathers of the Head, Neck, Back, and upper side of the Wings of a dusky ash-colour: All their ends marked with a red spot: But the great Wing-feathers are variegated with white at their tips; and also those which make up the Tail, which is a Palm and half long. Those which cover the Breast are sprinkled with longer marks of black, red, and white. The Belly is of a pale ash-colour, almost white. The Hips or Thighs are somewhat red; and for the space of an inch above the * knees bare of feathers. From these to the ends of the Claws remains the measure of two Palms. The Legs are greenish, and the Feet cloven into Tocs, which yet at the beginning of the

divarication are joyned together by a short membrane, because it must needs be conversant about waters. The Claw of the back-toe is greater than the rest. Upon the tips of the feathers of the Head stuck certain small, tender, white capillaments; which argued this to be a young bird.

§. III.

The lesser ash-coloured Heron, called by the Germans, The Night-raven.

IT is much lesser than the precedent, and hath a shorter Neck. Its Back and the crown of its Head are black; its Neck ash-coloured. Its Throat and Belly tintured with yellow. A white line is extended from the Eyes to the Bill. From the hinder part of the Head it hath a Crest of three feathers five inches long hanging down over the Back, whereby it is differed from all other birds. Its Wings and Tail are cinereous: Its Bill black: Its Legs and Feet of a yellowish green.

At *Sevenhuys*, a Village in *Holland* in a fenny Country, not far from *Leyden*, we described a young bird of this kind (as I suppose) taken out of the Nest, thus. Its Legs and Feet were green; and those bare of feathers for about an inch above the knees. The outmost Toe connected with the middle one by an intervening membrane from the divarication to the first joint: The Claw of the middle Toe ferrate on the inner side, as in the common *Heron*. The Eyes of a lovely yellow. In the colour of its body it comes nearer to a *Bitton* than to the common *Heron-flam*. Two rows of the greater Wing-feathers are black, with white tips. The Tail is of a dusky ash-colour, the tips of its component feathers being also white. The Back and Neck-feathers are black, with red shafts, or red lines in the middle. In the Neck the red lines are broader. The tips of the lesser covert feathers of the Wings decline from white to red. The Belly is white, with black spots: The Chin white: The feathers on the Throat on one side white, on the other black. After it hath mew'd its first feathers without doubt it changes its colour, as most other birds do. It hath a great Gall; a large Stomach, glandulous within, but not fleshy or muscular (which kind we in *English* call a Gizzard) in it were the shells of Beetles. In the middle of the bone called the *Merry-thought* is an *Appendix*. This Bird lays white Eggs.

The *Germans* call it, *Nacht rabe*, that is, *Night-raven*, and under that title it is figured and described by *Gesner*, whence * *Aldrovandus* propounds it under the title of * *Orniolus*. *Night-raven* for a distinct species of bird, subjoyning it to the *Corvus Syloaticus* of *Gesner*. It is called *Night-Raven*, because in the night time it cries with an uncouth voice, like one that were straining to vomit.

§. IV.

The great white Heron. Ardea alba major.

IT weighed forty ounces. Its length from the tip of the Bill to the end of the Feet was fifty three inches and an half; to the end of the Tail no more than forty. Its breadth, as we reckon it, between the tips of the Wings extended sixty inches and an half.

Its colour was all over as white as snow. The number of the main feathers of its Wings was about twenty seven; of its Tail twelve: The length of its tail six inches and an half. It had no Crest. Its Bill, as in the common *Heron*, was yellowish. The edges of its Eye-lids, and that naked space between the Eyes and Bill green. The Eyes of a pale yellow. The Legs for some space above the knees bare of feathers. The Feet and Talons black: The outer fore-toe connected with the middle one from the divarication to the first joint by an intervening membrane. The Claw of the middle toe had its interior edge * ferrate.

The figure of the Breast-bone was arcuate [bending like a Bow] as in other *Heron*s. The vertebres of the Back were six or seven: Those of the Neck to the fourth were bent downwards, all the rest upwards. It had a great Gall: A triangular *Appendix* on the *Merry-thought*. Of its fat is made Oil good for the wind, &c.

This differs from the common *Heron*, 1. In magnitude, as being lesser than that. 2. In the length of its Tail. 3. In that it wants a Crest. A certain *English* man (saith *Aldrovand*) affirmed, that he had seen white *Heron*s, though but rarely; which neither in bigness of body nor shape differed at all from the common *Heron*, but only in colour.

* *Lepidula aquatica trisulcata*.

* In another place Mr. *Willughby* puts it among his queries, whether the five upper vertebres in the Neck of a *Heron* be reflected the contrary way.

* I suppose he means *Italian* measure, not an hand breadth.

* The word is *Capit.*, which may be Englished *Blame*.

* Sawn of toothed.

colour. I suspect this Relator whosoever he was, was mistaken, accounting the bird in this article described by us not to differ from the common *Heron-flaw* but only in colour. For Mr. *Johnson*, who hath seen the *white Heron in England*, puts it down for a distinct kind in his Method of Birds communicated to us.

§. V.

The lesser white Heron: Ardea alba minor.

Being weighed it scarce amounted to one pound. From the tip of the Bill to the end of the Tail it was twenty four inches and an half long, to the end of the Legs thirty two and an half. It is all over of a pure white colour, like the bigger. From the hinder part of the Head hangs down backward a short Crest. About the Eyes the skin is bare of feathers, and of a green colour. The Bill is four inches and an half long, and black. The Eyes are of a pale yellow. The Tongue short: The Feet green; but sometime covered with a black, scaly bark, which may easily be rubbed or scraped off. The Legs are bare of feathers something above the knees, and up higher than in the former kind. The outer fore-toe is connected with the middle from its rise to the first joint by an intervening membrane. The middle Talon is toothed, as in the rest of this kind. It hath also but one blind gut, like them; and a great Gall.

It differs from the precedent white *Heron* in being much lesser, and in having a crest, which that wants.

We take this to be the same with the small white *Heron* or *Garzetta* of *Gesner* and *Aldrovand*, and with *Bellonius* his *Aigretta* of the *French*, although the descriptions differ in some particulars.

Gesner saith, that the feathers of the Crest are long, and fold at a great rate. But *Bellonius* and *Aldrovandus* write, that these feathers, which Noblemen and great Commanders are wont to stick in their Caps and Head-pieces for ornament, and which are fold very dear in the Cities subject to the *Turks*, do not grow on the Head, but on the Back, at the ridge of each Wing. Our Bird, which we bought in the Market at *Venice*, had no such feathers; perchance they had been before plucked off, and concealed by the Fowler that sold us the bird.

The second lesser white *Heron* of *Aldrovandus* is the very same with this, called also *Garzetta* in the Valleys of *Malalbergo*, as will manifestly appear to him that will but take the pains to compare the descriptions. *Aldrovand. tom. 3. pag. 93.* describes it thus. It is a bird all over white, excepting the Legs and Bill, which are black. Its Bill is long, slender, very sharp-pointed, all of one colour. Between the Eyes and Bill is a certain spot of green. The Pupil of the Eyes is black, encompassed with a yellow or golden circle, and that again with a black. The Neck and Legs, as in other *Hérons*, are long; so are also the Toes, but yellow. The back-toe is the least of all: The middlemost of the fore-toes longest, and that on the right side of it next in length. The Claws black and sharp. The Wings very great; the Tail short; the Body slender and little.

This, I say, is without all doubt the same with our small white *Heron*; neither (as I judge) doth it differ from the *Garzetta* of *Aldrovand*, before described, in any thing but in age, for that was a young bird. In this there is no mention made either of the Crest, or of those rare feathers growing on the Back. Perchance they were by the Fowlers, (who knew well enough their value) plucked off from both *Aldrovands* bird and ours.

§. VI.

* *The third small white Heron of Aldrovand.*

It is lesser than the precedent, but more fleshy. Its Bill small, thick, sharp-pointed, all yellow. The top of the Head and Neck are almost of a Saffron colour; which, though more remis, is seen also in the Breast. The Neck is shorter than in other *Hérons*. The Eyes are situate as it were in a certain yellow spot: Their *Irides* are yellow, encompassed with a black circle. The Thighs and Legs are long, of a yellow colour, inclining to *Saffron*. The Toes are, in proportion to the body, bigger than in other *Hérons*, very long, dusky, encompassed also with whitish annular scales.

Two

Two of the fore-toes are joyned together by a small membrane, as in the rest. Its Claws are long, very sharp, and hooked: That of the middle toe, longer than the rest, is ferrate, as in the *Bittour*. The Tail is not very short.

Besides this *Aldrovand* figures another with a short, thick, sharp Bill, very long toes, the fore ones dusky: The head inclining to Saffron-colour: The Bill and Legs yellow. Else the whole bird is white.

§. VII.

* *The red-leg'd Heron, or Cirris of Virgil according to Scaliger. Aldrov. tom. 3. p. 398.*

This is lesser than all other *Hérons*, and hath also a very short Neck: The whole bird almost from Saffron inclining to a Chestnut colour on the underside deeper, on the upper side and Wings paler. The Tail is so little that it seems altogether to want one. The Pupil of the Eye is encompassed with a yellow circle, that with a *scarlet ^{miniature, which signifies the colour of red lead,} one, and this again with a black. Very beautiful feathers, partly yellow, and partly black, arising from the forehead hang down all over the upper part of the Head and Neck. The Bill is (strong, long, sharp, of two colours, where it joyns to the head green, or from green inclining to blue; and this colour reaches as far or farther than the middle of the Bill, the remaining part being black. The Legs and Feet are of a deep red colour as in many *Pigeons*: The Talons black. The Toes very long, and joyned with a small membrane, or some rudiment of it.

Besides, he sets forth the figure of another in all things like this, save that the same colour in the body is more remis, the Feet yellowish, the Neck on the sides besprinkled with many black spots; which are not in the other.

§. VIII.

* *The Heron which they call Sguacco in the Valleys of Malalbergo. Aldrov.*

* *Ornithol. tom. 3. p. 400.*

It hath tufts of feathers on the head almost of the same colour with the immediately precedent; to which also it is in bigness almost equal, or a little less. Its Bill is shorter than in that, but strong, of the same colour with the whole Back, viz. of a yellow ferrugineous. The *Iris* of the Eye is of a golden colour, encompassed with a black circle. The whole Head and Neck are part-coloured of yellow, white, and black. Underneath on the belly it is white, as is also the Tail, and better part of the Wings. The Thighs are yellow: The Legs and Toes are greenish, as in some *Water-hens*. They say it is a bold and courageous bird.

§. IX.

The Heron called Squaiotta at Malalbergo. Aldrovand.

It hath a yellow Bill, black at point, a short Tail, green feet. The tuft on the Head consists of thirty feathers, the middlemost of which are white, and the outermost black. There grow also on its Back of that sort of elegant feathers before mentioned, of a red colour, and black at their roots. * Both perchance have their names from ^{Squaiotta & Squaiotta.} like a Bow.

§. X.

* *Another small Heron with a bow-bill, Aldrovand.*

The Bill of this is more *arcuate than in any of the precedent. On the nether ^{like a Bow,} side the Neck and Breast (which is sprinkled with black spots tending downwards) are white. Else the whole bird is of an ash-colour, underneath paler, above deeper. The Thighs in this Bird, contrary to what they are in others of this kind, are covered with feathers.

§. XI.

* The Bird of kin to the Heron described by Aldrovand, t. 3. p. 412.

* Of the same kind or Family.

THIS sort of Bird, though it hath a much shorter Bill, I have made * congenerous rather to the *Heron* than other birds, and am wont to call it the *black Heron*, because in its meen, and the fashion of the rest of its body, it resembles the *Heron*-kind. For it hath a long Neck, long Legs, very long Toes, sharp Talons, and finally, a short Tail. Its colour is all over uniform, viz. blackish, except the Neck, which is compassed with a whitering, and the Bill which is yellow, in the middle, and at the end, as well above as below, marked with a black spot.

It hath not as yet been our hap to see these six last birds, and so we have nothing to add to their descriptions, which we have borrowed of *Aldrovandus*.

§. XII.

The *Bittour* or *Bittern* or *Mire-drum* : *Ardea stellaris*, *Taurus* of *Pliny*, called by later Writers *Butorius* and *Botaurus*, and by *Aristotle* also *Ocnus*.

IN bigness it falls not much short of the common *Heron*-shav. Its length from the tip of the Bill to the end of the Claws is thirty eight inches, to the end of the Tail twenty nine. Its Head is small, narrow, or compressed at sides : The crown black : At the angles of the mouth on each side is a black spot. The Throat and sides of the Neck are red, with narrow transverse black lines. The Neck being clothed with very long feathers, seems to be both shorter, and much greater than indeed it is. The long feathers on the Breast are black in their middles. The inner part of the Thighs and the lower Belly are white, with a light tincture of red. The outsidess of the Thighs are variegated with black spots. The Back is particoloured, of pale red, or *seuile mort* and black, [with cinereous also mingled,] the black spots being greater there than in the rest of the body. The bottoms of the feathers on the Throat are white. The great or quill-feathers of the Wings are shorter than in the common *Heron*. The tips of the greater feathers are black, else they are all variegated with transverse red and black lines. The lesser rows of Wing-feathers are of a paler red. The Tail is very short and little, made up of ten feathers of the same colour with the Wing-feathers.

The black streaks or marks between the shoulders are broader, and tend downwards ; but the red colour is paler, languishing into a yellow. Its Bill is straight, strong, thick at the Head, and growing slenderer by degrees to the point, of a greenish colour, and having sharp sides or edges. The sides of the lower Mandible fall within the upper, when the Mouth is shut. The upper Chap hath a long cranny, or furrow, or channel excavated on each side, wherein are the Nostrils. The Tongue is sharp, not cloven, reaching scarce to the middle of the Bill. The *Irides* of the Eyes from hazel incline to yellow. [In another bird they were red.] The slit of the Mouth is very wide, running out beyond the Eyes toward the hinder part of the Head, so that the Eyes seem to be situate as it were in the very Bill. Under the Eyes the skin is bare of feathers, and of a green colour. The Ears are great, and wide open.

The Shanks are bare a little above the knees : The Feet green : The Toes great, and very long, armed also with long and strong Talons ; that of the middle Toe serrate on the interior edge, in like manner, and for the same purposes, viz. of holding fast Eels, and other slippery fish, as in the rest of this kind. The back-claw, which is remarkably thick and long above the rest, is wont to be set in Silver for a Pick-tooth, and is thought to have a singular property of preserving the teeth. The outmost fore-toe is joyned to the middlemost at bottom by a membrane.

They say, that it gives always an odd number of bombs at a time, viz. three or five : Which in my own observation I have found to be false. It begins to bellow about the beginning of *February*, and ceases when breeding time is over. The common people are of opinion that it thrusts its Bill into a Reed, by the help whereof it makes that lowing or drumming noise. Others say, that it thrusts its Bill into the water, or mud, or earth, and by that means imitates the lowings of an Ox. It hides itself commonly among reeds and rushes, and sometimes lies in hedges with its Neck and Head erect.

In

In the Autumn after Sun-set these birds are wont to soar aloft in the air with a spiral ascent so high till they get quite out of sight : In the mean time making a singular kind of noise, nothing like to lowing.

As for the interior parts, The annular cartilages of the Wind-pipe after its divarication, are not entire [or perfectly round] but only semicircular : The other part of the circle being supplied by a thin, loose membrane : They stand also at a greater distance one from another than before. The Liver is divided into two Lobes, and hath its Gall-bladder annexed. The interior membrane of the Stomach is wrinkled, and full of papillary glandules. Beneath the lower Orifice of the Stomach was as is were a secondary stomach, of a singular structure, and of the figure of the Letter *∞*, having a thick coat, and being rugged and uneven with folds or wrinkles within. The first stomach was lax and membranous rather than muculous, like a Dogs stomach, as *Bellonius* rightly compares it. It hath no *Crow* : Only one blind gut, like the rest of this kind, half an inch long. The Gullet just below the Bill may be vastly dilated, so as to admit a mans fist. In the stomach dissected we found the fur and bones of Mice. Instead of the transverse ribs are only small *Appendices*. The Vertebres next the Head are bent downwards, all the rest upwards. The Breast-bone is * arcuate. The angle or aperture of the Breast-bone is filled up with a thin, loose, pellucid membrane. The Gullet and Windpipe descend down the right side of the Neck. It hath also a bony *Appendix* in the angle of the *Merry-thought*, but less than the common *Heron*.

* Bending like a Bow.

It is called by later Writers, *Butorius* and *Botaurus*, because it seems to imitate *boatum tauri*, the bellowing of a Bull. The Author of *Philomela* calls it *Butio* : But his mistakes are so many, that no account is to be made of his authority. Some have made it to be the *Oncrotalus*, because of its voice ; which, to say the truth, seems to me much more to imitate the braying of an Ass than the lowing of a Bull : But *Pliny* hath so exactly described the *Oncrotalus*, that no man that shall compare the notes with the bird, can possibly doubt that it is that we commonly call the *Pelecan* : Though those that have seen and observed it, never heard it make any such braying noise when kept tame : Which is something strange ; unless perhaps being discontented with its captivity, it delights not to make that noise it doth when at liberty. The *Bittern* is laid above all other birds to strike at mens eyes. It builds upon the ground, commonly in a tuft of Rushes, lays four or five Eggs, of a round figure, and whitish colour, inclining to cinereous or green, not spotted at all.

This without doubt is that bird our common people call the *Night-raven*, and have such a dread of, imagining it cry portends no less than their death, or the death of some of their near Relations : For it flies in the night, answers their description of being like a flagging Collar, and hath such a kind of hooping cry as they talk of.

§. XIII.

* Aldrovandus his third sort of speckled Heron.

THIS Bird, sent from *Epidaurus*, was all over of one and the same colour, to wit, reddish, deeper above, lighter underneath. This same, or at least one very like to it, taken in our Fens, had a Bill a palm long, of a horny colour, straight and sharp-pointed. The upper Mandible was a little hooked at the end, and longer than the nether, with some blackness. The crown was black : The Neck ferrugineous, two palms long : The Back was black, and so was the Tail, which was very short ; the Rump beneath white : The Wings partly ferrugineous, partly white. The Legs nine inches long. The *Iris* of the Eyes was yellow. This seemed as yet to be a young bird, that had not mewed its first feathers.

§. XIV.

The greater speckled or red Heron of Aldrovand.

THIS seems to be a bastard kind between the *Bittour* and the common *Heron*, but to partake more of the common *Heron*, whence it would be more rightly intitled, The ash-coloured or blue Heron with red breast and sides.

In its bigness, shape, and ferrate Claw it agrees with the common *Heron*. The crown of its Head is black, adorned with a long Crest : Its Back ash-coloured, but darker than the common *Heron*. On the shoulders grow long, red, bristly hairs.

OO 2

The

The lesser covert-feathers of the inner side of the Leg are red. The Thighs are white, dashed with red. Near the Breast on both sides is a broad red stroke. The middle of the Throat is particoloured, with black and pale red spots. Down the sides of the Neck is a black line in the middle of two red ones. The lower part of the Neck under the long feathers was of a deep red. In other particulars it agreed with the *common Heron*. It had but one single blind-gut: A huge Gall-bladder. The Ribs tend straight downwards from the vertebres of the back, like those of Quadrupeds. The Guts are small and slender. The remnant of the passage conveying the Yolk into the Guts is plainly to be seen in the form of a blind gut, about the middle of the intestines, the Pipe conveying Gall from the Gall-bladder to the gut, and the ** porus bilarius* do not concur in one common passage, but continue their channels several and distinct, and perforate the Gut in two places, but near one to the other.

* The gall-dust or vein conveying gall from the Liver.

§. XV.

* The *Brazilian Soco* of Marggrave.

It is a Water-fowl, of which here [in *Brazil*] many sorts may be observed. It is of the bigness of the lesser *Heron*: Hath a straight, black, and sharp-pointed Bill, two inches and an half thick where it is thickest. Its Head is like a *Heron's*, as is also its Neck, being a foot long: Its Eyes black with a * golden circle. The Wings and Tail are equally extended, ending together. For the Tail is short, being not of above five inches length. The Legs are sufficiently long, above the knees four inches, and as many below. Each foot hath four Toes, three standing forwards, and one backwards. The Thighs above the Knees are above half way bare of feathers, covered with a dusky skin. The Head and Neck are clothed with brown feathers, variegated with small specks. Along the lower side of the Neck down as low as the Breast is a line drawn of white feathers, mixt with black and brown ones. The Back and Wings are indeed black, but variegated or powdered with very small yellow specks or points. The Belly is of the same colour with the Back. Under the Wings are black feathers, spotted with white.

* I suppose he means the Pupil black, and the Iris golden.

§. XVI.

* The *Brazilian Heron* called *Cocoi* of Marggrave.

It is an elegant bird, of almost the bigness of a *Stork*: Hath a straight, sharp Bill, about six inches long, which is of a yellowish green at its rise: Crystal Eyes, with a golden circle; the skin about the Eyes bare, and ash-coloured. The length of the Neck is fifteen inches, of the Body ten, of the Tail five. The Tail and Wings equally extended. The upper Legs are feathered half down, being eight inches long; the lower are but six and an half, covered with an ash-coloured skin. The Feet have four Toes, disposed in the usual manner; the middle the longest, the rest shorter, all armed with crooked dusky Claws. The Throat and all the Neck are white: The top of the Head and sides of a black colour, mixt with cinereous. It carries [on the Head] an elegant, erect crest of the same colour, from which two neat feathers hang down backwards, of a black colour, inclining to cinereous, each five inches and an half long. The fore side of the Neck is spotted longways [or down its length] with feathers mixt of black and cinereous. In the lower part of the Neck before, it hath long, white, fine delicate feathers hanging down, which we were wont to wear in our Caps. The whole Back, Wings, and Tail are of a pale ash-colour, mingled with a little white. The upper half of the Legs upper is invested with white feathers. Along the length of the Back are extended fine elegant, ash-coloured feathers, for their figure and structure like those on the Neck. It is good meat.

§. XVII.

§. XVII.

* The *Brazilian Heron*, with a serrate Bill, of Marggrave.

It is of the bigness of a *tame Duck*, or a little bigger: Hath a straight, sharp Bill, the fore-half, as well as above as beneath, doubly serrate, four inches and an half long. It hath the Head and Neck of a *Heron*; a black Pupil, with a golden circle: Its Neck is a foot long; its body five inches and an half; its Tail four, wherewith the Wings end. The whole Legs are nine inches and an half long: The upper, to the middle part only, covered with feathers, the lower half being bare. In each Foot four Toes, after the usual manner. The upper Bill is dusky, but toward the rise of a yellowish green. The whole Head, and upper side of the Neck are covered with long feathers, of a pale yellow colour, waved with black. Under the Throat it is White. The Neck beneath, the Breast and lower Belly have white feathers, waved with brown, which [brown] is round about edged with yellow. The whole Back and Wings are covered with dusky feathers, waved with yellow. The quill-feathers of the Wings are mixt of equal parts of black and green, their tips being white. The Tail consists of such feathers as the ends of the Wings, but crossed with white lines. The Legs and Feet are of a dark grey colour. The Claws dusky. Its flesh is eaten, and tastes like that of other *Hérons*.

§. XVIII.

* *Guiratinga* of the *Brazilians*, called by the Portuguese *Garza*, that is, a *Heron*. Marggrave.

It is of the bigness of the *Spoon-bills* or *Pelecan* of *Gesner*, and the same shape of body. It walks erect, with its long Neck and extended Bill, which is straight, sharp, yellow, four inches long, the upper part thereof black, the lower white. It hath long Legs like a *Heron*, of about six inches. The Toes are after the usual manner. The Legs outwardly, as also the Feet, are yellow, inwardly mixt of green and dusky. The whole body is covered with milk-white feathers. On the neck are most elegant white feathers, more fine than *Ostriches*. It is a Water-fowl, and its upper Legs are [for some space] bare of feathers.

§. XIX.

* A small *Brazilian Heron* of Marggrave.

It is scarce so big as a common *Pigeon*: Hath a very long Neck; a straight, sharp Bill, dusky above, of a yellowish white beneath, two inches and an half long: A short, sharp Tongue: Eyes of a mean size, with a black Pupil, and a yellow circle: A small Head; a slender Neck, but seven inches long, whereas the length of the Body is scarce four: Long Legs, each five inches; the * upper half bare of feathers half way: Four Toes in each Foot, placed the common way, with crooked and sharp Talons. As for its colour, near the Eyes, where the Bill is inserted the skin is of a yellow [melini.] The Head above is covered with feathers of a steel-colour, with pale brown ones intermingled. The whole Neck, with the Breast and lower Belly have a white Plumage, mixt with cinereous and pale feathers, so that they appear variegated. The Back is black, and partly of a Steel colour, with pale brown feathers intermingled. The long Wing-feathers are greenish, having a white spot on their tips. The rest of the Wing is elegantly variegated of brown, steel-colour, wax-colour, and ash-colour. The Tail is two inches long, covered with the ends of the Wings, which are equally extended with it. The Legs above are mingled of ash and wax-colour. The naked part and the Feet are covered with a yellow skin. The Claws brown. This bird walks erect and stately.

* This part of the legs others call the thighs, though indeed it answers most properly to the legs in man, being the second intermedium from the foot.

CHAP. II.

Of the Stork. De Ciconia.

§. I.

The common or white Stork: Ciconia alba.

IT is bigger than the common *Heron*: Its Neck thicker and shorter than the *Herons*: Its Head, Neck, and fore-part white: The Rump and outside of the Wings black: The Belly white. The quill-feathers of the Wings black: The Tail white: The Bill long, red, like a *Heron's* Bill. The Legs long, red, bare almost to the Knees or second joint from the Foot. The Toes from the divarication to the first joint connected by an intervening membrane. The Vertebrae of the Neck are fourteen in number. Its Claws are broad, like the nails of a man; so that *πλευρόνυχος* will not be sufficient to difference a man from a Stork with its feathers plucked off. *N. B. Herodotus* attributes such like Claws to the white *Egyptian Ibis*. The Claw of the middle Toe is not ferrate. It is seldom seen in *England*, and not unless driven over by a storm of wind, or some other accident. My honoured Friend Sir *Thomas Brown* of *Norwich*, a person deservedly famous, for his skill in all parts of learning, but especially in natural History, sent me a Picture of one of these birds taken on the Coast of *Norfolk*, drawn by the life, with a short description of it, as follows. It was about a yard high: It had * red Bill and Legs; the Claws of the Feet like humane Nails. The lower parts of both Wings were black, so that when the Wings were closed or gathered up, the lower part of the Back appeared black. Yet the Tail, which was wholly covered and hid by the Wings (as being scarce an inch long) was white, as was also the upper part of the Body. The quills were equal in bigness to *Swans* quills. It made a snapping or clattering noise with its Bill, by the quick and frequent striking one Chap against the other. It readily eat Frogs and Land-snails which we offered it; but refused Toads. It is but rarely seen on our Coasts. So far Sir *Thomas Brown*: Whose description agrees exactly with ours in all points.

* Of a red lead colour.

* In his Annotations up-
on *Riches* his
Animals.

The white Stork, saith * *Joannes Faber*, is very rare in *Italy*: All these twenty eight years that I have spent at *Rome*, I never but once saw a white Stork, and then but one, on the top of the Tower, called *Torre de Conti*, I know not by what wind driven thither. *Aldrovandus* also himself an *Italian* born, and then a very old man, confessed that he had never seen a white Stork, for that the Territory of *Bologna* did neither breed nor feed them. But still it is most certain, that Storks before the approach of Winter fly out of *Germany* into more temperate and hot Countries, very strange it is, *Italy* being contiguous to *Germany*, and hotter than it, that they should not fly thither, at least pass over it in their flight Southward.

I know them (saith the same *Faber*) who have learned by ocular inspection, that Storks and Peacocks, when such Serpents as they swallow passed alive through their bodies, (as they will do several times, creeping out at their Fundaments) use to set up their Rumps, and clap their Tails against a wall so long, till they feel the Serpents dead within them.

§. II.

The black Stork. Ciconia nigra.

IT is equal to the white Stork, or but little less than it. Its Head, Neck, Back, and Wings are black, with a certain gloss or mixture of green, not unlike the colour of a *Cormorant*: Its Breast, Belly, and sides are white. The Bill green: The Legs also green, and bare of feathers up to the Knees or second joint from the Foot. The membrane connecting the Toes reaches on the outside as far as the first joint of the middle Toe, not on the inside. The young ones when they want meat make a noise not unlike to *Herons*. We saw this Bird first near *Frankfurt* on the *Main*, after at *Strasbourg*: We suppose those we saw were young ones, for that their Bills and Legs were green, whereas in that which *Faber* described they were red.

Jo. Faber

*Jo. Faber** describes this Bird very diligently and exactly thus: Its length from the point of the Bill to the Feet was six spans and an half: The measure was the fame of the Wings extended. The Bill alone (wherein was seen a short reddish Tongue) was a *Roman* foot long: The Legs two spans. The Gullet was of that capacity or wideness, that the Bird being hanged up by the Feet, a great Frog dropt out of the mouth of its own accord, without any force, and four more were found entire in its stomach. In which stomach, made of hard flesh, were many Frogs bones, and a certain dry lump not unlike dung. The Neck was a span and half long: The Legs and Feet meager. The colour of the Wings and all the Back blackish, as far as the lower Belly. This black is mixt with a dark bluish and purple, the dusky colour being predominant, especially in the greater feathers of the Wings. The Neck recedes further from the colour of the Back, and doth wonderfully delight the Eyes with a most grateful mixture of blue, purple, and green; such as is observed in the necks of *Pigeons* and *Mallards*. And because only the lower region of the Belly, beginning far below the Breast, hath white and soft feathers; the whole Bird is rather to be denominated black than white. The orbits of the Eyes, the whole Bill, Legs, and Feet are of a most pleasant scarlet red, or * vermillion colour. All which things put together, viz. the stately structure of the whole body, and that symmetry of various and pleasant colours, render this Bird very elegant and beautiful to behold. It is not altogether whole-footed like a Duck, yet the three fore-toes are joined together half-way by a tough membrane; the back-toe or keel being pretty long, and armed with a strong Talon. These birds frequent Fens, Lakes, and Sea-shores; into these waters they run, intent upon their prey, sometimes also diving under water, maintain themselves by fishing, as I am assured by our Fowlers upon their credit. This Bird is not very frequent at *Rome*, yet is it sometimes exposed to sale among other Sea-fowl. Its flesh hath such a fishy taste and stench, that being thrown to our Cat, she refused it, and would not touch it. He endeavours to prove this Bird to be the *Mergus* of *Ovid*. See the Author.

* Resembling
the colour of
the Ancients,
or our Cri-
stalline.

All Storks make a clattering or snapping noise with their Bills, by clapping one Mandible nimbly against the other. They are said to live only in Republics and free States; but this we found by experience to be false, observing them in the Territories of some Princes in *Germany*. There is a tradition also that they feed and nourish their Parents in their old age, when they are unable to seek their own food: Whence the word *ἀλεπαρρίζ*, signifying the duty of Children in requiting and maintaining their aged Parents.

§. III.

* The American Stork, called by the *Brasilians* Maguari of *Marggrave*.

IT is a Bird like to the Stork in figure, and bigness, and partly also in colour. It hath a Neck a foot long: A straight, sharp Bill, of nine inches length; long naked Legs, like the Stork; a short Tail reaching no further than the Wings. Its Bill at bottom half way up is of a yellowish green: The other half being of a bluish ash-colour. It hath small, silver-coloured Eyes with a black Pupil, and about them a Vermilion-coloured skin, and the like also below, near the rife of the Bill, or between the Bill and the Throat, which when she is angry she lets hang down under the Throat after the manner of the *Senembi*. The whole Head, Neck, and all the body is covered with pure white feathers; and on the lower part of the Neck those white feathers are of a good length. The Tail also is white, but above covered with certain black feathers. The Wings at setting on are covered with white feathers, but near the Back with black; which black hath a gloss of green. Its Legs and Feet are red and like a Stork. It snaps also with its Bill like our Country Stork. Its flesh is excellent.

CHAP. III.

* The Ibis of Bellonius.

* *Elvius.*

Formerly (saith he) we took the black Ibis to be the *Hæmatopus*: But observing its manners and conditions, we found it not to be the *Hæmatopus*, but the black Ibis, which *Herodotus* first mentioned, and after him *Aristotle*. It is of the bulk of the * *Curlew*, or a little less, all over black: Hath the Head of a *Cormorant*. The Bill where it is joyned to the Head is above an inch thick, but pointed toward the end, and a little crooked and arched, and wholly red, as are also the Legs, which are long, like the Legs of that Bird which *Pliny* calls *Bos taurus*, *Aristotle* names *Ardea stellaris*. It hath a long Neck like a *Heron*, so that when we first saw the black Ibis, it seemed to us in the manner and make [*habitu*] of its body like the *Bittour*.

This kind of Bird is said to be so proper to *Egypt*, that it cannot live out of that Country, and that if it be carried out it dies suddenly.

The Ibes are birds very useful to the *Egyptians*, for destroying Serpents, Locusts, and Caterpillars, with which that Country is greatly infested; and therefore divine honours were given them. The Ibes (saith *Cicero*) dispatch a power of Serpents. They turn away a great Plague from *Egypt*, when they kill and consume those flying Serpents that are brought in thither by the West wind out of the Deserts of *Libya*. Whence it comes to pass, that they do no harm either alive by their biting, or dead by their stench. For which cause the Ibes are invocated by the *Egyptians*. What else the Ancients have delivered concerning the Ibis, see in *Aldrovandus*.

CHAP. IV. §. I.

The Spoon-bill. Platea five Pelicanus of *Gesner*. Leucorodius five Albardeola of *Aldrovand*. Lepelaer of the Low Dutch.

That which we described was a young one taken out of the Nest. It weighed forty five ounces and an half. Its length from the tip of the Bill to the end of the Claws was thirty four inches, to the end of the Tail twenty four. The colour of the whole body was Snow-white like a *Swan*. Beyond the Eyes toward the Bill grow neither feathers nor down, as in the *Heron* and *Cormorant*. The angle also of the lower Chap is bare, which perchance is peculiar and proper to this Bird.

The first quill-feather of the Wing is black; of the second only the exterior Web, or outer half from the shaft; and the tip of the interior are black; of the third only the top, and of the fourth yet less. In like manner the tips and shafts of the inferior feathers of the second row were black. The Tail is very short, viz. three inches and an half, made up of twelve feathers.

The Bill is of a singular and unusual figure, plain, depressed, and broad, near the end dilated into an almost circular figure, of the likeness of a Spoon, whence also the Bird it self is called by the Low Dutch, *Lepelaer*, that is, *Spoon-bill*. The broad part of the Bill is graven with twelve or fourteen lines or crevices; but its inward surface is smooth and even, without any such sculptures or gravings. The Bill in the young ones before they be grown up is white, or of a flesh-colour, in old ones black. The Tongue is sharp and little. The Legs half way up the second joyned are bare of feathers; in the young ones of a whitish colour. The Feet strong: The fore-toes joyned together by a membrane; the outmost and middlemost to the second joyned, the middlemost and inmost no further than the first. The Toes and Claws black.

We did not observe in our Bird those reflections of the Wind-pipe, which *Aldrovandus* mentions, describes, and figures. It had a large Gall: The Guts had many revolutions. Above the Stomach the Gullet was dilated into a Bag, whose inward surface was rough and uneven, with many papillary glandules.

Its Eggs are of the bigness of Hens Eggs, white, and powdered with a few sanguine or pale-red spots.

In

In a certain Grove, at a Village called *Sevenbuys*, not far from *Leyden* in *Holland*, they build and breed yearly in great numbers, on the top of high trees; where also build *Hérons*, *Nights-ravens*, *Shags*, *Cormorants*, &c. In this Grove every sort of Bird (as they told us) hath its several quarter, where they build all together. When the young ones are ripe, those that farm the Grove with a hook on the top of a long pole catch hold of the bough on which the Nest is built and shake out the young ones, but sometimes Nest and all down to the ground.

§. II.

* *Tlahuquechul*, or the Mexican Spoon-bill of *Hernandez*.

It is a Bird of a strange Palate: It feeds only on living fish, and will not touch dead ones. It delights in ravin: In shape of body is like to the *Spoon-bill* or *Pelican*, but almost all over of a most beautiful scarlet or pale red colour. Its Bill is broad, round toward the end, and of an ash-colour: The Pupil of its Eye black, the Iris red, and wrinkled; Its forehead like that of a *Turkey* or *Aura*: Its Head almost void of hairs or feathers, of a white colour, with near the whole Neck, and part of the Breast: A broad black ring, distinguishing the Head from the Neck. It lives about the Sea-shores and Rivers.

§. III.

* The Brazilian Spoon-bill, called *Aiaia*, and by the Portuguese, *Colherado*, *Marggrava*, the same I suspect with the precedent.

Its figure it agrees with the *European Platea*, differing only in colour. Of the bigness of a Goose: Its Bill broad like a Spoon, and white: Its Neck long: Its Feet broad. It is all white, save that the Back and Wings are of a pale carnation colour. Its flesh is edible. It is very common about the River of *St. Francis*, and elsewhere in Fenny places. Probably this Bird is the same with the precedent. We have a Bill (I suppose) of one of these *American Plateas*, which is almost twice as big and long as that of the common *European*.

BOOK III. PART I. SECTION III.

Water-fowl not Piscivorous with very long slender straight Bills.

CHAP. I. §. I.

The Woodcock: *Scolopax Aldrov. tom. 3. pag. 472.*

It is somewhat lesser than a *Partridge*: The upper side of the body particoloured of red, black and grey, very beautiful to behold. From the Bill almost to the middle of the Head it is of a reddish ash-colour. The Breast and Belly are grey, with transverse brown lines. Under the Tail it is somewhat yellowish. The Chin is white, with a tincture of yellow. A black line on each side between the Eye and Bill. The back of the Head is most black, with two or three cross bars of a testaceous colour.

The prime feathers in each Wing are about twenty three, black, crossed with red bars. The feathers under the Wings are curiously variegated with grey and brown lines. The Tail is 3 inches long, consisting of twelve feathers, the tips whereof are cinereous above, and white underneath; their borders or outides as it were indented with red; the remaining part black.

The Bill is three inches long, or more, dark brown toward the end, near the Head paler or flesh coloured: The upper Mandible a very little longer than the nether: The Tongue nervous: The Palate rough: The Ears very great and open. The Eyes stand

Pp

stand higher or nearer to the top of the Head than in other birds, that they be not hurt when the thrusts her Bill deep into the ground. The Legs, Feet, and Toes are of a pale brown or dusky colour: The Claws black: The back-toe very little, having also but a little Claw.

The Liver divided into two Lobes, having a Gall-bladder annexed: The Guts long, slender, and having many revolutions. The blind Guts very short, not half so long as that single blind gut the remnant of the Yolk-funnel.

These are Birds of passage coming over into *England* in Autumn, and departing again in the beginning of the Springs; yet they pair before they go, flying two together, a Male and a Female. They frequent especially moist Woods, and Rivulets near hedges. They are said both to come and to fly away in a Mist. At *Nuremberg* in *Germany* I saw of them to be sold in *August*, whence I suppose they abide thereabout all the year. On the *Alps* and other high Mountains they continue all Summer. I myself have flushed *Woodcocks* on the top of the Mountain *Jura* in *June* and *July*. Some straglers by some accident left behind when their fellows depart remain also in *England* all Summer, and breed here. Mr. *Jessop* saw young *Woodcocks* to be sold at *Sheffield*, and others have seen them elsewhere. Their Eggs are long, of a pale red colour, stained with deeper spots and clouds.

Of two that I described, one was a Male, and the other a Female; the Female was heavier than the Male by an ounce and half; the Female weighing eleven ounces and an half, the Male but ten: The Female also was of a darker colour.

The flesh of this Bird for the delicacy of its taste is in high esteem. The Leg especially is commended, in respect whereof the *Woodcock* is preferred before the *Partridge* itself, according to that *English* Rhythm before recited in the Chapter of the *Partridge*.

*If the Partridge had the Woodcock's thigh,
'T would be the best bird that ever did fly.*

The length of this Bird, measured from the tip of the Bill to the end of the Tail, was thirteen inches and an half: The breadth between the tips of the Wings extended twenty six inches.

Among us in *England* this Bird is infamous for its simplicity or folly; so that a *Woodcock* is proverbially used for a simple, foolish person.

§. II.

The Snipe or Snite: Gallinago minor.

THIS weighs about four ounces. Its length from the tip of the Bill to the end of the Toes is thirteen inches; to the end of the Tail eleven and an half. The Wings spread were seven inches and an half wide.

A pale red line divides the Head in the middle longways, and on each side parallel thereto a list of black, and without the black over the Eyes another line of the same colour with that drawn along the middle of the Head. Between the Eyes and the Bill is a dusky brown line. The Chin under the Bill is white: The Neck is mingled of brown and red. The Breast and Belly are almost wholly white. The long feathers springing from the shoulders reach almost to the Tail, having their outward halves from the shaft of a pale red, the inner black and glittering, their tips red; which colours succeeding one another make two lines down the Back. The covert-feathers of the Back are dusky, with transverse white lines: Those incumbent on the Tail are red, crossed with black lines. The greater covert-feathers of the Wings are dusky, with white tips, the lesser are particoloured with black, red, and grey. The inside coverts are curiously variegated with brown and white lines.

The Quil-feathers are in each Wing about twenty four in number; of which the outer edge of outmost is white almost to the tip: of the succeeding the tips are something white, but more clearly from the eleventh to the twenty first; else they are all brown. But the last five are variegated with transverse black and pale-red lines. The Tail is composed of twelve feathers, two inches and an half long. It seems to be shorter than it is, because it is wholly covered and hid by the incumbent feathers. The tips of its outmost feathers are white, the rest of the feather varied with cross bars or lines of brown, and grey, or pale red colour. The following to the two middlemost

middlemost are of like colour with these outmost, save that their tips are less white, their bottoms more black, and the uppermost cross bar reddish. Of the two middle feathers the tips are white, next beneath the white is a brown bar, under the brown a red one, with some dusky spots in the middle. The rest of the feather is black, save that in the outer Webs are sometimes seen one or two reddish spots. [I suppose the colours of the Tail vary, and are not exactly alike in all birds.]

The Bill is almost three inches long, black at the tip, and somewhat broad and chamfered: The Tongue sharp: The Irides of the Eyes hazel-coloured. The Legs are of a pale green, the Talons black. The Toes long, and separated from the first rib, without any connection or cohesion. The back-toe is very small.

The Liver is divided into two Lobes, with a large Gall appendant. The Stomach not very fleshy. Its flesh is tender, sweet, and of an excellent relish.

It lives especially on the fatty unctuous humour it sucks out of the earth; but feeds also upon Worms and other Insects.

Some of these Birds abide with us all the Summer and build in our Moors and Marshes; laying four or five Eggs at a breeding time. The greatest part leave us, and fly into other Countries. It seeks its food in moist and fenny places, and in Rivulets and Gills of water, where also it hides itself, so that it is very hard to find or espy it.

§. III.

The Gid or Jack-Snipe or Judcock: Gallinago minima seu tertia Bellonii.

IT weighed two ounces: Its length from the tip of the Bill to the end of the Claws was ten inches and a quarter, to the end of the Tail eight and a half. It is about half so big as a *Snipe*; whence it is called by the French, * *Doux pour un*, as *Bellonius* * *i.e.* Two for one. witness. The colour of the Rump is a shining bluish purple, like the feathers on a *Starling* back; the tips of the feathers being white. The scapular feathers covering the Back have their outward border yellow, the middle part brown, with red spots, their inner border of a shining blue, yet without any mixture of purple. The Neck is particoloured of brown, white, and pale red. The top of the Head black, with a red tincture: Above either Eye passes a broad line of a pale yellow. The Throat is of a pale red, painted with white and brown spots. The Breast and Belly white. Between the Eyes and Bill is drawn a black line or border. The Males in this kind differ from the Females neither in colour, nor in magnitude. The prime feathers of the Wings were in number twenty four, of which the first or outmost ten were brown or dusky: The tips of the next ten white. The three last or inmost on the outside the shaft were streaked with red and black. The tips of the greater covert-feathers are white: The lesser rows of Wing-feathers are black, but partly tipped with red.

The Bill is almost two inches long: The upper Chap a little longer than the nether, toward the end broad and rough with * points, [chamfered] yet the very utmost tip smooth. The Legs bare somewhat higher than the Knees, pale-coloured, with a dash of green. The Toes divided to the bottom: The back-toe small: The Claws black. It hath a Gall-bladder, a muculous Stomach: The single blind Gut or *Appendix* being the remainder of the Umbilical funnel conveying the Yolk into the guts, shrunk up. It feeds upon Beetles, and other Insects.

It hides itself among Rushes, not rising sometimes till you are just ready to let your foot upon it: It is a simpler bird than the *Snipe*, and less frequent with us. I sometimes following the vulgar error, thought it not to differ from the *Snipe* in kind, but only in Sex, taking it to be the *Cock-Snipe*. But afterward being advised by Mr. *M.Lister*, I found it to differ specifically: For dissecting several of these small ones some proved to be Males, some Females.

p. IV.

* *The Brazilian Guarauna of Marggrave.* *Rusticula aquatica Brasiliensis.*

IT is of the bigness of the *Jacu*; hath a freight Bill, a little inclining downward, yellow, but dusky at the tip, four inches and an half long. Its body is also of the same length. The upper Legs are feathered down half way, six inches long. Each Foot hath four Toes so disposed as is usual, the middle of which is three inches long, the rest shorter. The whole bird is covered with brown feathers, mingled with much shade. The Head and all the Neck are indeed of the same colour, but besides, speckled with white, as in the *Jacu*. It is pretty good meat.

CHAP. II. §. I.

The Godwit, called in some places the Yarrowbelp, or Yarrowp, in others, the Stone-Plover: The Barge or Agocephalus of Bellonius, as I take it. An Fedoa Gesceri? An Rusticula Aldrov?*

* Tom. 2.
p. 439.

IT is like and equal to a *Woodcock*, or a little bigger: From point of Bill to the Claws seventeen inches and an half long: Between the tips of the Wings spread twenty eight and an half broad. The feathers of the Head are grey or cinereous, with some tincture of red, their middle parts being black; above the Eyes white. The Neck and Throat are reddish. The Breast of a sordid white. The Back is particoloured of red, black, and white; the middle parts of the feathers being black, the edges of a pale red. In the Cock the Throat and Breast are crossed with black lines: In the Hen the Throat and Neck are grey [or ash-coloured,] The whole rump almost is white, powdered with blackish specks. [In the Bird that I described a triangular spot of white, took up the Rump or lower part of the Back, the vertex respecting the birds Head.] The great feathers of the Wings are black, with white shafts: The rest of the first row, as also those of the second row have reddish ash-coloured tips and edges. The lesser covert-feathers of the Wings are of like colour with the body. The Tail-feathers are in number twelve, all crossed alternately with black and white lines; the middlemost, which are the longest, of 3 $\frac{1}{2}$ inches length: The rest on each side in order somewhat shorter, the exterior than the interior.

The Bill is white at the Base, black toward the point, longer for the bigness of the bird even than the *Snipes* or *Woodcocks*; the upper Mandible a little longer than the lower: The Tongue sharp: The Nostrils oblong: The Ears great.

The Legs are not very long; naked to the middle of the second joint: The Claws black. The Claw of the middle fore-toe on the inside is thinned into an edge. The outer Toe is joined to the middle one from the rise to the first joint by a pretty thick membrane of a dusky or dark green colour.

It lives and seeks its food on the sandy shores by the Sea-side, which for a great space are uncovered when the Tide is out, where it hides not itself like the *Woodcock*, but walks up and down the Sands in open view, like a *Gull*.

*Barge of Bellonius, which he saith they in French call, * Petit Corlieu.*

* A small
Corlieu.

It lives in Meadows like the *Curlew*, and in like manner frequents the Sea. It is a timorous bird, not abiding the approach of a man. It hath a cry like a *Goat*; whence we guess it was named by *Aristotle*, *Higecephalus*, or *Goathead*. But lest perchance this my conjecture may seem rash and groundless, I will describe it. It is lesser than the *Curlew*, but for colour not much unlike it, hath also a shorter Bill, and freight. *Aristotle* writes thus of it. *It altogether wants a Spleen*, and a little after, *For in some birds the Gall sticks to the Stomach, in some to the Guts, as in the Dove, Raven, Quail, Snallow, Sparrow; in some to the Liver and the Stomach, as in the Agocephalus, and lastly, in others to the Liver and the gut, as in the Hawk and Kite.* But in our *Barge* dissected we found the Gall sticking both to the Liver and Stomach, as any one that will

will be content to take the pains to cut it up, may observe. It is esteemed a delicate bird by the *French*, but seldom appears in places far remote from the Sea, seeking its food most willingly in salt Marshes. A good part of Marsh-birds are nocturnal, as this also is, intent upon feeding by night rather than by day. Wherefore we shall receive it for the *Higecephalus*, till some other more fit name be found out for it. Thus far *Bellonius*.

I take this bird of *Bellonius* to be the same with our *Godwit*, which in *Cambridgeshire* and the Isle of *Ely* they call *Tarrowbelp*.

§. II.

*The second sort of Godwit, which seems to be the same with the Totanus of * Aldrovand, called as Venice, Vetola.*

* Tom. 2.
p. 439.

IT weighs above nine ounces: Its length from Bill to Tail is full seventeen inches; to the feet twenty one: Its breadth from Wings-end to Wings-end twenty eight. Its Bill is like a *Woodcock*, three inches three quarters long, black at the end, else reddish: Its Legs long, and bare above the Knees: The outmost Toe joined to the middle by a membrane as far as the first joint: The middle Claw excavated on the inner side.

The Chin is white, with a tincture of red: The Neck * cinereous: The Breast and Belly white: The Head of a dusky ash-colour, whitish about the Eyes: The Back brown: The Rump encompassed with a white ring, as in the *Pygargus*.

The quill-feathers in each Wing were twenty six: The first or outmost the longest, all black, as were also the six next. The rest to the nineteenth were half white: In the twentieth and twenty first the outer edges were also white. The tips of the feathers of the second row were white, and together made a white line crossing the middle of the Wing. Its Tail was three inches long, made up of twelve feathers. The two middlemost of which were almost wholly black: The outmost, especially on the outside Web, white almost up to the tips: In the rest in order the white part was less and less to the middlemost.

This bird hath thick blind-guts, $\frac{1}{2}$ of an inch long, and besides that single one about the middle of the guts. It differs from the precedent, 1. In the colour of the Tail: 2. In the colour of the Back and upper side, which in that is various, in this one and the same: 3. In bigness, being less than that.

§. III.

The third sort of Godwit.

BESIDES the two already described Mr. *Willughby* acknowledges a third sort of *Godwit*, which in *Cornwall* they call the * *Stone-Curlew*, differing from the precedent in that it hath a much shorter and slenderer Bill than either of them.

* Others call
the *Ordinarius*
of *Belloni-*
us the *Stone*
Curlew.

BOOK III. PART I. SECTION IV.

Water-fowl not piscivorous with very long, slender, crooked Bills.

CHAP. I. § I.

The Curlew: Numenius five Arquata.

The Female weighed twenty eight ounces; the Male, which is somewhat less, and commonly called, *The Jack Curlew*, twenty five and a quarter. The length of the Female from the tip of the Bill to the end of the Claws, was twenty nine inches: To the end of the Tail twenty three and an half. The distance of the tips of the Wings spread forty inches.

The middle parts of the feathers of the Head, Neck, and Back are black, the borders or outides ash-coloured, with a mixture of red. In the Throat and Breast the middle parts or shafts of the feathers are black, the borders or edges, in the Breast white, in the Throat white, with a tincture of red. The Chin is not spotted: The Rump and Belly are white.

The feathers investing the under side of the Wing are all white: the first or outmost quill-feathers all over black, the rest spotted with white. The first feather of the second row is all black: the tips of the eighth or ninth next are white. This Bird hath a small, sharp-pointed, black feather at the end of the Wing, which whether or no it is to be reckoned among the quill-feathers one may justly doubt.

* In some five inches and an half, in some above six.

Its Bill is * very long, narrow, bowed, of a dark brown or black colour: Its Tongue sharp, and very short, extending not further than the angle of the lower Chap: The Nostrils long: The Legs long, of a dusky blue colour, bare of feathers half up the second joint: The Claws small and black: That of the middle Toe thinned into an edge on the inside: All the Toes connected by a thick membrane from the divarication to the first joint. It hath a great Gall-bladder, with a long neck extending to the gut, which concurs not in one common passage with the * Gall-pore, but enters the gut at a distinct hole, though near to that.

* *Numenius bistratus.*

It hath a muculous Stomach or Gizzard like granivorous birds: In the Stomach of one we found *Periwinkle* shells, small stones, and grit, &c. in another *Frogs*, &c. The single blind gut is very long: The common blind gut three or four inches long, and full of excrements. Above the Stomach the Gullet is dilated into a bag, granulated within with thick-set papillary glandules.

This bird for the goodness and delicate taste of its flesh may justly challenge the principal place among Water-fowl: Of this our Fowlers are not ignorant, and therefore sell them dear. They have a Proverb among them in *Suffolk*:

*A Curlew, be she white, be she black,
She carries twelve pence on her back.*

It is a Sea-fowl, seeking its food on the Sands and Ouzes, and in salt Marshes: It is found on the Sea-coasts on all sides of *England*.

§. II.

The Whimbrel: Arquata minor, at Venice Taraniolo.

This bird, the bigness excepted, is very like the *Curlew*. It weighs twelve ounces. The measure from Bill to Tail was seventeen inches, to the end of the Feet twenty: Of the Wings spread thirty three and an half. The Bill three inches long: The blind guts two: The guts twenty nine. Its Legs were greenish: The quill-feathers marked with great, semicircular, white spots. The lesser rows of covert-feathers had their edges white, their middle parts of a reddish black. The Belly and Thighs were white.

Mr. *Johnson of Brignal*, in his Papers communicated to us, describes this Bird by the name of a *Whimbrel* thus. It is less by half than the *Curlew*, hath a crooked Bill, but shorter by an inch and more: The Crown deep brown without speckles: The Back under the Wings white, which the *Curlew* hath not. Besides, the colour of the whole body is more dusky or dull. It is found upon the Sands in the *Tees* mouth.

The

The Gallinula Phaeopus of Gesner, which I suspect to be the same with the precedent.

This Bird about *Strasbourg* is called *Brackvogel*: It hath a black body, sprinkled with a few red and yellowish spots; a slender, long, black Bill, moderately bending; a whitish Neck, its under side about the middle and below tending to yellow or * red: A white Belly; dusky or ash-coloured Legs, as the Picture represents. This description was taken from a Picture, and therefore the less to be credited.

* The word in *raffus*, &c. may be rendered *rufus*.

The other Phaeopus or lesser Curlew of Gesner; the same with our Whimbrel.

This Bird some call (as they do the greater *Curlew*) *Regenvogel*, that is, *Rain-fowl*; and in *Italy*, *Tarangolo*. It is almost like the last described, hath ash-coloured Legs like that, and a white Belly and Chin: A like Bill also, save that it seems a little longer. The Wings are spotted with white, else of a dusky red; but their long feathers and the upper side of the Back are blackish. The Throat and Breast have something of an obscure and very faint red, and are speckled with many black spots.

I see no reason to doubt but this is our *Whimbrel*, with the * names agree, and the descriptions differ not in any considerable note.

* *Tarangolo* and *Tarangolo* in Italian.

CHAP. II.

* *The Falcinellus of Gesner and Aldrovand, which we may English, The Sitch-Bill.*

WE have thought fit (saith *Aldrovand*) to place this next after the *Heron*, because that both in magnitude and the whole shape of its body it resembles a *Heron*, the Bill only excepted. This *Gesner* sometime saw alive at *Ferraria* in *Italy*. Its body was bigger than a *Pigeon*, of an elegant colour, almost green, with something of purple here and there mixt, as in the Back of the *Lapwing*, the colour varying, as it is variously exposed to the light: The Head and Neck brown: But the upper part whitish, spotted with black. Its Bill was slender, long, and bending downwards like that of the *Curlew* or *Corvus Sylvestris*: Its Legs long, and Feet cloven. Some call it, * *The black Heron*. But this that I saw was not grown up: They say it comes to be bigger, and perchance also may change something in colour by age. Among all the Birds that I have hapned to see, none seems to me to come nearer the *Ibis*. Thus far *Gesner*. Now (proceeds *Aldrovandus*) whether this be that Bird which our Country-men call *Falcinellus*, I do not well know. For it differs not a little from *Gesner's* description. But it may happen (as he well notes) that this kind of bird may vary, according to the difference of age, both in bigness and also in colour. Our *Falcinellus* comes well up to the bigness of the *Heron*, and resembles them in the whole fashion and shape of the body, excepting the Bill. Its Head, Neck, Back, Breast, Belly, Thighs, Rump are of a spadiceous colour, tending to dusky: But the Neck and Breast are sprinkled with certain oblong dusky spots. In the middle of the Back is a kind of spot, of a dark green colour: Which same colour is also seen in the Wings and Tail. The Bill is blackish, very long, and falcate. The Thighs as far as they are naked, the Legs and Feet are of the same colour with the Bill. The Legs and Toes are extended to a conspicuous length.

* *Ardea nigra* in Italian.

CHAP. III.

* *Curicaca of the Brasilians, called by the Portuguese Mafarino.*

IT is a Bird, in the judgment of *Cladius* like to the *Curlew*: Of the bigness of a hand-som *Goose*: But its Head about as big as a *Duck*. Its Neck six inches long, three thick, or a little more: Its Bill six inches long, crooked like an *Hungarian* Sword, of a dusky fire colour. The length of its body from Neck to Vent eleven inches, the thickness one foot. The length of the Wings sixteen inches, of the Tail (which ends with the Wings) nine: Its Legs are eight inches long: Its Feet

two

two and an half; red like a *Duck*, but not flat, having four Toes with black Claws, three standing forward, and one backward. Its Head and Neck have a white Plumage, mingled with yellow, in the upper side pretty long. Its Eyes are black, with a yellow circle. About the Eyes and the beginning of the Throat there is a black skin. The whole body is covered with black feathers, excepting the Back, Head, and Belly, where are some of a dark ash-colour, and in the middle of the Wings others white, mixt with grey, as in *Storks*. The rest of the feathers of the body, of the beginning and end of the Wings and of the whole Tail are black. The upper Legs to the middle are void of feathers; for it is a Water-fowl. Its flesh is good, which I have often eaten roasted and fried with butter.

There is found also another sort like to this, but much less, about the bigness of a *Hen*, which is called *Matuitui*.

It is common about the River of *S. Francis*, in *Itapama*, and elsewhere.

CHAP. IV.

* *The Acacalotl or Water-Raven* [*Corvus aquaticus*] of *Hernandez*.

THe Cock from the end of the Tail to the point of the Bill was almost four spans long; and of a moderate bigness. The Legs a span and half: The Bill bending like a Bow, two Palms long, and pretty slender: The Feet cloven into four Toes, armed with very black Claws. The Legs are not so black as the Claws: The Bill is blue, and the Head small. The lower feathers are dusky, with red intermingled: But the upper promiscuously purple, black, green, and shining. The Neck is seven inches long. The Head and Neck are covered with dusky, white and green feathers, and some a little yellowish. The Eyes are black, but the *Iris* of a sanguine colour. From the outer angles of the Eyes as far as the Bill for the space of one inch the skin is bare of feathers and smooth, of a reddish colour. The Wings underneath are of a shining changeable colour, which varies according as it variously reflects the Sun-beams; but above near their setting on first then of a lovely green and Peacock colour. It is native of the Coast of *Mexico*: It lives about Lakes, and feeds upon Fishes. It breeds and brings up its Young in the Spring time in fenny places. It yields a good nourishment, and not very unpleasant, but gross, and (as other Marsh birds) of a fishy sent. This Bird doth not much differ from the *Fulcinellus* of *Gesner* and *Aldrovand*.

* *affine*.

CHAP. V.

* *The Brasilian Guara of Marggrave: The Indian Curlew of Clusius, Exot.*

IT is a Land and Water-fowl, of the bigness of the *Spoon-bill*; It hath a Bill of the figure of a *Polonian Sword*, long, of a whitish ash-colour; black Eyes; a Neck and Head like the *Spoon-bill*. The Wings end with the Tail, which is short, and carried low. The Legs are long, the upper half whereof covered with feathers, the rest bare. In each foot four Toes, situate as usual, long, with short Claws, at bottom joyned together by a skin. The Feet and Legs as far as naked are of a light grey, as is also the Bill. The whole Bird is covered with feathers of an elegant scarlet colour: Only the quill-feathers of the Wings have their ends black. This Bird, when first hatch'd, is of a blackish colour; next it becomes ash-coloured; then white: After by degrees it begins to grow red, and in the second year of its age is all over of that colour they call *Columbin*; and as it grows older it acquires that elegant scarlet colour. It feeds upon fish and flesh, water always added.

That Bird which *Clusius* from a Picture sent him by the Duke of *Areschot*, described by the title of the * *Indian Curlew*, is without all doubt the same with this. It approached well to the bigness of a *Curlew*: Had a long Neck, a long and sharp Bill, but crooked like a *Sithe*: Long and slender Legs, furnished with four Toes, of which the three foremost are longest, the hind-toe short: All armed with black Claws. The Thighs for half that part that is above the knee are destitute of feathers: Which

note

note is common to it with all other birds which are wont to frequent watery and fenny places. Its Tail was short, not exceeding the ends of the Wings. But the feathers invelling the whole body were of another colour than those of our common *Curlew*, for they were wholly red like Vermilion, excepting the ends of the quill-feathers of the Wings, which were black. Its Bill and Legs were yellow, almost like *Oker*.

SECTION V.

Water-fowl not piscivorous, with slender Bills, of a middle length.

CHAP. I.

* *The Himantopus of Pliny, Aldrov. lib. 20. cap. 30.*

THe whole Belly, Breast, and under-side of the Neck is white, as is also the Head beneath the Eyes: For above the Eyes it is black, and so is it too on the Back and Wings. The Bill is likewise black, a Palm and more long, slender, and fit to strike Wood-lice, and other Insects. The Tail from white inclines to ash-colour, but underneath is white. On the upper side of the Neck are black spots tending downward. The Wings are very long. The Legs and Thighs are of a wonderful length, very small and weak, and so much the more unfit to stand upon, because it wants a hind-toe, and the fore-toes for the length of the Legs are short; so that well and of right may it be called *Himantopus*, or *Loripes*, its Legs being soft and flexible like a thong or string. The Toes are of almost equal length, and of a sanguine colour, yet is the middle toe a little the longest. The Claws are black, small, and a little crooked.

See *Gesner's* description of this bird, and what else he hath concerning it in the Author himself, or in *Aldrovandus*, who repeats it out of him, *Ornithol. lib. 20. cap. 30*. To say the truth, it hath not been our hap as yet to see this bird.

CHAP. II.

* *The Crex of Bellonius.*

IT hath long Legs like the *Limosa*, called by the *French, Chevalier*, but is bigger; yet lesser than the *Curlew*. It hath a long, black Bill like the *Curlew*; and also black legs and Head, the Neck, back, and Breast white. The rest of the upper parts of the body incline to ash-colour. The Wings are blackish, crossed on both sides by a white line near the * ridge. It seeks its food on the ground, and in the air also * *The Latine word is cygne.* It pursues and preys upon flies, in like manner as the *Lappwing*. When it flies it makes a great noise.

This Bird *Bellonius* saw about the River *Nile*; and thence guessed it to be the *Crex* of *Aristotle*, because in its cry it often repeats this word *Crex, Crex*.

CHAP. III.

The Sea-Pie: Hamatopus Bellonii.

IT is of the bigness of a *Magpie* or *Crow*: of the weight of eighteen ounces: From Bill to Tail, or Claws (for it is all one) eighteen inches long.

Its Bill is straight, three inches long, narrow, or compressed sideways, ending sharp, of a red colour, [In another bird, perchance a young one, the Bill was half

Qq

* *Numerius Indicus.*

* *Psittula*.

half black from the tip.] By its figure the Bill seems to be framed by Nature, to thrust under * *Limpets*, and to raise them from the Rocks, that so it may feed upon their meat. The upper Chap is a little longer than the nether. The *Irides* of the Eyes, and edges of the Eye-lids of a curious red colour, [in another bird they were from yellow hazel-coloured.] The Legs and Feet red. It wants the back-toe. The out-molt and middle toe are for a good way up joyned together by a membrane: So that this Bird seems to be of a middle nature between whole and cloven footed. [In some we observed the feet to be of a pale dusky colour, perhaps those also were young ones.] The Claws were black.

The Head, Neck, Back, and Throat to the middle of the Breast were black. The rest of the Breast and Belly white, as also the Rump. From this likeness in colour it took the name of *Sea-pie*. In one bird there was a great white spot under the Chin, and another lesser under each eye.

The Tail is made up of twelve equal feathers, of four inches long, the lower half white, the upper black. The prime feathers of each Wing are about twenty eight, of which the first is black, having only the interior edge white: In the rest in order the white part is enlarged, till in the twentieth and three following it takes up the whole feather. The succeeding from the twenty third grow gradually black again. The covert-feathers of the middle quills are white, and together make up a transverse bed of white in the Wing.

The Stomach is great, not muscous, but membranous, in which dissected we found *Limpets* entire, upon which it seems chiefly to feed and live; as from the make of its Bill we gathered before. It hath a great Liver, divided into two Lobes, with a Gall annexed: A small Spleen: Huge Ureters. The Cock differs not from the Hen in colour. Its flesh is very black, hard, having a rank taste, in a word very bad meat; which we cannot but wonder at, seeing it feeds chiefly upon Shel-fish; as do also the best relish'd and most savoury of Water-fowl. On the Coast of *Wales* and elsewhere on the Western Shores of *England* we saw abundance of these birds.

Care is to be taken that the *Hemantopus* be not confounded with the *Himantopus* or *Loripes*, so called from the weakness and flexibility of its long legs, as we said before.

CHAP. IV. §. I.

* *Ornithol.*
lib. 20. cap. 66.

The greater Plover of * *Aldrovand*: The Venetian Limosa of *Gesner*: As also the Glottis of the same *Gesner* and *Baltner*: Called at Venice Totano, a name it should seem common to this and the following bird.

It weighs near seven ounces: In length from the tip of the Bill to the end of the Claws it exceeds seventeen inches; to the end of the Tail fourteen; in breadth from tip to tip of the Wings expanded it is about twenty four and an half. Its Bill is black, yet at the angle of the lower Mandible red, slender, straight, two inches and an half long. Its colour on the upper side of the Head, Neck, Wings, Shoulders, and forepart of the Back is mixt of brown and whitish, we commonly call it grey. On the Head the outer borders of the feathers are white, the middle parts black. A white line passes above the Eyes. The under side of the body is all white and also the lower part of the Back or Rump.

The quill-feathers of the Wings are in number about twenty six, all dusky or dark brown. The five outmost darker than the rest, their interior Webs being powdered with white specks: The inner quills are paler, speckled with white. The Tail is three inches long, composed of twelve feathers, waved with cross lines or bars of brown and white alternately placed.

* Lead colour.

Its Legs are very long, bare of feathers for two inches above the first joint [or Knees] of a middle colour between green and livid, or * plumbous: The back-toe small: The Claws black. The outmost Toe joyned to the middle at bottom. Its Stomach small, less fleshy than in granivorous birds.

This bird seemed to me in bigness to exceed the *Redshank*: Its Legs are also longer. *Gesner's* description of the *Limosa*, which you have in *Aldrovand's Ornithology*, lib. 20. cap. 23. answers in all points exactly to this bird. The description also of the *Glottis*

Glottis in *Gesner* and its figure in *Baltner* agree to it. I believe also that this is the bird which the French call *Chevalier aux pieds verts*, or the green-leg'd Horseman, from the length and colour of its Legs. At Venice in Italy we saw many of them.

§. II.

The other Totano, perchance *Gesner's Totanus*, *Aldrov.* lib. 20. cap. 24.
An *Callidrys rubra Bellonii*?

WE saw and described at Venice another bird, we think different from the precedent: though the main difference were in the colour of its Legs, which were of a pale yellowish-red. Its Bill also seemed to be something shorter.

We take this to be the bird the French call *Chevalier aux pieds rouges*, the red-leg'd Horseman; the precedent (as we said before) that they denominate, *Chevalier aux pieds verts*. And perchance they may differ only in Sex; for this was a Male, that a Female. For in other birds also of this kind, as for example, the *Erythra* of *Gesner*, which he puts among the *Water-hens*, the Female differs from the Male both in bigness, and in the colour of the Legs. The red *Callidrys* of *Bellonius* is either the same with this or very like it: It differs in that the Neck and feathers under the Wings and Rump are ash-coloured, and that on the Temples on each side it hath two black spots, which give it a shadow to the Eye-brows, which themselves also are marked with a white spot. His figure of the red *Callidrys* doth not answer to the description, for the Bill and Legs are drawn too short.

CHAP. V. §. I.

The Redshank or Pool-Snipe: *Gallinula Erythropus major Gesneri*
* *Aldrov.* Totanus of the same *Gesner*, as it seems to us, *Aldrov.* tom. 3. * *Ornithol.*
pag. 439. An *Bellonii Pardali* congener longiore rostro? Book 20.
Chap. 25.

IT is of a middle size for bigness between a *Lapwing* and a *Snipe*, approaching to the quantity of a *Plover*. The Head and Back are of a dusky ash-colour, spotted with black [In some I observed the Back to be of a dusky or brown colour, in lining to green.] The middle of the Neck is more cinereous. The Throat particoloured of black and white, the black being drawn down longways the feathers. The white colour seems to have something of red mingled with it. The Breast is whiter with fewer spots, and those transverse.

The Tail, and feathers next to it are variegated with transverse waved lines of white and black alternately. The number of Tail-feathers is twelve; the length of the Tail two inches three quarters. The quill-feathers in each Wing are twenty six, of which the first is brown, only its shaft white: The five next of a black brown; on the inner side white, and as it were sprinkled or powdered with white. The tip of the seventh is white, with one or two transverse black lines. In the following feathers the white spreads it self further, till in the nineteenth it takes up the whole feather: The * foremost covert-feathers are black; the middle varied with white lines. The other rows of covert-feathers are of the same colour with the Back, that is of a dark ash-colour.

* Underland
is of the first
row of coverts

The Bill is two inches long, slender, and like a *Woodcock's*, of a dark red at base, black toward the point. The Tongue is sharp, slender, and undivided; the upper Mandible longer, and something crooked at the very tip: The Eyes hazel-coloured: The Nostrils oblong. The Legs of a fair, but pale red: The Claws small and black. The back-toe is very small, having a very little Claw. Of the fore-toes the inmost is the least: All are connected by a membrane below; but the outmost with a larger, extending to the second joint.

It is common on the sandy shores about *England* every where.

It breeds in Marshes, and if any one comes near its Nest it flies about, making a great noise like the *Lapwing*.

It differs from the *Totanus* of *Aldrovandus*, 1. In that it is much less. 2. That it hath shorter Bill and Feet. 3. In the dusky colour of its Back. 4. In the red colour of its Legs and Feet.

* Gallinula
cythrops
major.

The figure of the * greater red-leg'd Water-hen in *Gesner* and *Aldrovand* doth not agree well to this bird: For the Bill is drawn too short and thick at the Head. *Gesner's* description of his *Totanus* doth so well agree to it in almost all particulars that I doubt not but it is the same bird. Only in the length of the Bill and Legs, and in the bigness of the body is some diversity.

§. II.

* Lib. 20. c. 25.

The Gambetta of * *Aldrovand*.

* *Falco*, i. e.
dark or
dusky.

THE Gambetta of *Aldrovand* is also near of kin to the *Redshank*, which he thus describes. Its Head, Neck, and Breast are cinereous, all over sprinkled with many * brown spots, greater on the Back, lesser on the Neck and Breast, least of all on the Head. The lesser-feathers of the Wings are black: The body cinereous, on the Wings and Back inclining a little to red: The Belly white: The Bill black. The Irides of the Eyes of a yellowish green, encompassed with a black circle. The legs and feet from yellow incline to red.

This Bird we saw at *Milan* in *Italy*, and thus described. It is something less than a *Lapwing*. The upper surface of its body is grey, of such a kind of colour as is seen in the Backs of Hen Ducks and Teal, or of the *Curlew*. Its Legs and Feet are long and yellow, its Claws black. It hath the back toe. Its Bill is shorter than the *Redshanks*, longer than the *Lapwings*; near the Head of a flesh-colour, near the tip black. The prime feathers are twenty five in each Wing. The Tail half a hand-breadth long, not reaching so far as the ends of the Wings closed. It hath the Head and Neck of a *Tringa*.

CHAP. VI.

Of the Birds called *Tringæ*.

§. I.

* Tom. 3.
pag. 481.
* *Aldrov.* Or-
nithol. tom. 3.
p. 461.

The *Tringa* of * *Aldrovand*: The *Cinclus* of *Bezonius*: The *Gallinula* *rhodopus* or *phœnicopus*, and also the *Ochropus* media of * *Gesner*.
The *Steingall* of *Leonard Baltner*.

IN bigness it equals or exceeds a *Blackbird*. The colour of the upper side is of a * dusky green, and shining like silk. The feathers growing on and between the Shoulders, as also the quill-feathers next the body, and most of the covert-feathers of the Wings are spotted on the edges with many white specks. Those on the top of the Head and upper side of the Neck want these spots. [N. B. That this Bird was a Female, for in the Males there are many and thick set spots on the Head, so that they make up certain lines or strakes.] The Circumference of the Eyes and the Chin are white. The Throat is white, and spotted with brown. The feathers on the middle of the Back are blackish, with white edges: Those next the Tail milk-white. The colour also of the Breast and whole Belly is purely white.

The quill-feathers, twenty four in each Wing, are all dusky, save only the fore-mentioned, three in number. The Tail is more than two inches long, consisting of twelve feathers of feathers of almost equal length. The outmost of these are wholly white; the next near their tips marked with a white spot. The third in order from the outmost have one broad transverse white line not far from the point; the fourth two; the fifth two and an half; the middlemost three or four. The covert-feathers of the under side of the Wing are brown, with white edges. The interior bastard wing makes a lovely shew. For its feathers being of a dark brown, or black colour, are curiously varied with many white lines, drawn not directly cross each feather, but obliquely, yet parallel one to another in each Web of the feather, and by pairs concurring at the shaft in an obtuse angle all along the length of the feather. >>>>>

The Bill is an inch and half long, straight, slender, compressed at the sides, of a dark green, sharp at the point: The upper Mandible a little longer than the nether: The Tongue black, not cloven. The Eyes of a greater size, with hazel-coloured Irides. The Legs are long, lead-coloured, with a tincture of green: The Toes also long;

long; the two outmost connected by a membrane almost to the first joint: The back-toe little: The Claws black.

This is a solitary bird; yet in breeding time they fly two together, Male and Female, about the banks of Pools, Lakes, and Rivers.

The *Gallinula* *rhodopus* or *phœnicopus* of *Gesner*, which he saith the Germans call *Steingall*, differs from the *Steingall* of *Baltner* in the colour of the Legs, which in *Gesner's* Bird was like that of a Roie or Amethyst, in *Baltner's* a dirty green. But seeing the other notes agree, I judge it to be the same Bird, different perchance in Sex: since (as *Baltner* hath observed) in some of these Birds the Sexes differ in the colour of their feet.

§. II.

* The third *Tringa* of *Aldrovand*, called by the Italians, *Giaroncello* & *Pinirolo*,

THE Bill of this is much blacker than that of the precedent, and a little shorter; the upper Chap somewhat longer than the nether. It is the same for shape of body, only somewhat different in colours: For whereas both are chiefly of a dusky and chestnut-colour in the Head, Neck, Back, and Wings, that in all these parts hath more of dusky, this more of the other colour. The Tail in like manner, though it be something shorter, is white underneath, above approaches to the same chestnut colour. In the Breast, Belly, Thighs, Legs and Feet it differs little or nothing.

§. III.

The lesser *Tringa* or *Sandpiper*: An *Cinclus* secundus seu minor * *Aldrov?* *Gallinula* * *Ornithol.*
hypoleucos *Gesneri*, *Aldrov.* tom. 3. pag. 469. Ein Pfisterlein *Leon. Baltner.* COL. 1. p. 494.

IT weighs near two ounces; and is from Bill to Feet eight inches three quarters in length.

The middle of the Neck is ash-coloured, else the whole upper surface of the body is of a dusky fordid green, elegantly variegated with darker transverse lines; only there is something of red mingled with the feathers on the middle of the Back, and those that spring out of the Shoulders. The Head is paler, not varied with cross lines, but black strokes drawn downward along the shafts of the feathers. The Sides, Breast, and Belly are white. Above the Eyes is a white line. The Throat is of a fordid white, the shafts of the feathers being darker. The three or four quill-feathers next to the body are of the same colour with the body: The outmost is dusky, [or dark brown] the inner edge of the second, about the middle of the feathers length, hath a spot of white: Of the rest to the tenth the inner Webs in order have larger white spots. After the tenth the white spreadeth beyond the shaft into the other Web of the feather. The tips also of the feathers, from the fourteenth to the twentieth, are white. The primary covert-feathers of the Wings, or those of the first row, as well the upper, as the nether, have white tips: Of the upper, those especially from the tenth to the twentieth: Of the nether, those next the body, which indeed are wholly white, and not varied with lines. The ridge or base of the Wing is white. The feathers of the third row are white almost to the bottom. But between the third row and the base of the Wing is a broad line of brown. The middle feathers of the Tail are of the same colour with the body: The third on each side from the two middlemost have their tips white: The fourth are more white: Of the fifth all the exterior Web is white, and a little also of the interior: In the outmost the white spreads further into the interior Web.

The top of the Bill is of a dusky blackish colour, the bottom whitish: The tip a little bent downward: The Eyes hazel-coloured: The Ears great. The Feet of a pale green: The Claws black. The outmost fore-toe joyned at bottom to the middle one by a membrane; the back-toe small: The Stomach less muscular than in granivorous birds, in which dissected we found water-intests.

These are also solitary birds, living singly, except in breeding time, when they fly together by pairs, the Male and his Female. I suppose this Bird is the same with that *Gesner* describes under the title of *Pilvenckegen*, especially for that he saith it makes a noise by night, like one crying or lamenting, which thing (as we have been informed) is true of our bird. Only it seems to be something lesser, and of a darker colour above. See *Aldrovand.* tom. 3. p. 485.

They

They frequent Rivers and Pools of water. I have seen of them about the River *Tame* in *Warwickshire*, the Lake of *Geneva*, &c.

CHAP. VII.

The Knot: *Canuti regis avis. An Bellonii Callidrys nigra?*

IT weighed four ounces and an half; from the tip of the Bill to the end of the Feet was ten inches long; between the ends of the Wings stretcht out twenty inches broad.

As for the colour, the Head and Back were of a dusky ash-colour, or dark grey: The Rump varied with white and black lines: The Breast and Belly white: The sides under the Wings spotted with brown. [In some Birds we observed a white line between the Eyes and the Bill.]

The greater quill-feathers of the Wings were black, with white shafts: The outer edges of the next after the fifth white: Of the second row of Wing-feathers, the foremost were black, with white tips: From the fourth the white increased, or spread it self further down the feather. The lesser covert-feathers of the Wings were of the same colour with the back, only fringed as it were with white. The Tail was two inches and a quarter long, made up of twelve feathers, the outmost whereof on each side was white.

The Bill was near an inch and half long, black, as in the *Woodcock*; bigger and stronger than in the *Snipe-kind*: The Tongue extended to the very end of the Bill. [Some Birds have a knob or eminency under the Bill like *Gulls*.] The Eyes great, and hazel-coloured. The feet greenish: The back-toe small: The fore-toes divided from the very beginning of the divarication, no membrane intervening. The Liver divided into two Lobes, with a Gall appendant.

About the beginning of Winter they are said to come into *Lincolnshire*, where they continue two or three months about the Sea-shores, and away again. They fly in flocks. [In the month of *February*, in the year of our Lord 1671, on the Coast of *Lancashire* about *Liverpool*, I observed many of this sort of birds flying in company; so that they are not peculiar to *Lincolnshire*.] Being fed with white bread and milk they grow very fat, and are accounted excellent meat. King *Knout* is reported to have been so fond of them, that from him they got the name of *Knots* or *Knouts*.

They may at first sight be easily distinguished from the *Tringa* by the line of white cross their Wings, were other notes wanting.

CHAP. VIII.

The Ruff, whose Female is called a *Reeve*. *Avis pugnax* * *Aldrov*.

THAT we described was a young one. It weighed five ounces: Its length from the tip of the Bill to the end of the Feet was fifteen inches. Its Neck was ash-coloured: Its Head of a dusky ash-colour, spotted with a dark brown. The Back and scapular feathers particoloured, of cinereous, black, and white: The Breast and Belly white: The Throat white and cinereous: The Chin white. The outmost ten Wing-feathers of the first row were black: Of the following the tips began to be white: From the fourteenth to the twentieth the edges were also white. The five next the body were of the same colour with it, having darker spots. The tips of the second row of Wing-feathers were white (of the foremost more obscurely) the remaining part of the same colour with the Back. The covert-feathers of the under side of the Wing were white. Those of the exterior bastard wing purely white. The Tail was two inches a quarter long, made up of twelve feathers, of a dusky colour, with whitish tips.

In the Cock birds a circle or collar of long feathers, something resembling a *Ruff*, encompasses the Neck under the Head, whence they took the name of *Ruffs*. This shaft in some is white, in some yellow, in some black, in some ash-coloured, in some of a deep blue, or black, with a gloss of blue shining like silk. For there is wonder-
full

* Tom. 3.
p. 413.

ful and almost infinite variety in the colours of the feathers of the Cocks, so that in the Spring-time there can scarce be found any two exactly like one to another. After Midsummer, when they have moulted their feathers they say they become all alike again.

The Hens are somewhat less than the Cocks; they change not their colours, and are like the Bird here described: They seldom or never fight.

Their Bills are like the *Tringa's*, black, but somewhat red about the Nostrils. The upper Mandible a little longer than the nether. The Tongue reaches to the end of the Bill. The Eyes are hazel-coloured. The Legs from yellow incline to red: The back-toe small: The outmost fore-toe joyned to the middlemost below with a membrane: The Claws black, pretty long, and almost straight. The Stomach within yellow: The Gall large.

They breed in Summer-time in the Fens of *Lincolnshire* about *Crowland*. They are fattened with white bread and milk, like *Knots*, being shut up in close dark rooms: For let in but the light upon them, presently they fall a fighting, never giving over till one hath killed the other, especially if any body stand by. The Fowlers when they see them intent upon fighting, spread their Nets over them, and catch them before they be aware.

In the Spring time they come over also to the *Low Countries*: And it is reported, that at their first coming in the beginning of the Spring there are many more Cocks than Hens, but that they never cease fighting till there be so many Cocks killed, as to make the number of both Sexes equal.

The Hens never have any *Ruffs*, the Cocks have none immediately after moulting time. When they begin to moult, white Tumours or Warts break out about their Eyes and Head.

CHAP. IX.

The Sanderling, called also *Curwillet* about *Pensance* in *Cornwal*.

IT is something bigger than the *Sand-piper*, though both take their names from sand. It weighs almost two ounces. Its length from the Bill to the end of the Feet is eight inches and an half, to the end of the Tail eight. The breadth of the Wings spread sixteen. It is rather long than round-bodied.

Its Bill is straight, black, slender, an inch long; for its figure and make like to a *Tringa's* Bill: The upper Mandible a little longer than the nether. The Tongue extended to the end of the Bill: The Nostrils oblong. The Ears great. The Legs, Feet, and Claws black: And, which is especially remarkable, it wants the back-toe: The fore-toes disjoyned from the very rise.

The Head is small, particoloured of cinereous and black. The Neck more cinereous. The middle of the Back, the Shoulders, and scapular feathers are of a lovely colour, in some various, of black and white; in others of black and ash-colour, each feather being black about the shaft, and cinereous about the edges. The rest of the Back to the Tail is of the same colour, but more faint and dilute. But the edges of the feathers have more of a reddish ash-colour.

Each Wing hath twenty two quill-feathers: The four outmost (excepting the shafts, which are white) all of a dark brown, or dusky colour. The rest have their upper halves, as far as they appear, above the second row brown, the lower white. However, these colours do not divide all the feathers equally, but from the fifth the white is gradually increased, so that in the twentieth it takes up almost the whole feather. The next following after the tenth have also their tips white. The first row of covert-feathers [next the quills] have white tips, which when the Wing is spread make a long transverse white line, broader and broader by degrees from the beginning. The feathers near the ridge of the Wing, and on the outmost joint, are all dusky, in the Cocks almost black, of the same colour with the middle of the Back. The Wings, when closed, reach as far or further than the Tail itself; which is short, of about an inch and half, or two inches, consisting of twelve feathers, of an ash-colour: The two middlemost darker than the rest, and almost black.

The whole Belly and under side of the Wings as white as Snow. The Breast in some spotted or clouded with brown; in others (perhaps these are the Males) no spots

spots appear, yet the Breast is darker than the Belly, and inclined to red. The blind guts are an inch and half long. The Stomach not very muscular. These birds live upon the sandy shores of the Sea, and fly in flocks. We saw many of them on the Sea-coasts of Cornwall.

CHAP. X.

- * The Rotknussel of Baltner, Rotkmillies or Gallinula Melampus of Gefner,
* Aldrov.

* Lib. 20.
* P. 45.

THE German name *Rotkmillies* (saith Gefner) seems to be compounded of the colour. For this Bird is of a red or ruflet colour, with dusky spots in the Neck and about the Eyes. But *Kmillies* (I know not whence derived) is a more common or general word; sith another Water-hen of this kind is also called *Matkmillies*. We from the colour of the Legs have imposed on it the name *Melampus*, which signifies *Black-foot*. For there is no bird I know of this kind that hath blacker feet. The body is dusky, with some spots of a fordid and dark colour. The Bill also is black: The Wings marked with black spots.

To this Bird (saith Aldrovand) that which I here give you, called by our Fowlers *Girola*, a name common to many birds, is very like, if not the same. For on the Head, Neck, and Breast, down to the middle of the Belly it is red, sprinkled with brown, and sometimes also white spots. Its Feet [and Legs] are coal-black. The small Wing-feathers are distinguished with cinereous and black: The great ones are black: The Bill is long, and a little bending, sharp at point. The Belly is white, with a tincture of red, and curiously spotted with black spots. The Tail also is white, but black at the end.

CHAP. XI.

- * Matkneitzel of Baltner: Gallinula Erythra of Gefner.

THIS Bird the Germans call *Matkern*, but for what reason (saith Gefner) I know not. I from the colour of its whole body have called it *Erythra*. But though almost the whole body (I except the Belly, which is whitish, with a faint tincture of red, and the Legs, which are ash-coloured) be red, yet is that redness darker on the Back, and intercepted with white spots: Brighter in some of the Wing-feathers; the longest whereof approach to the colour of red Oker. In the Neck beneath are some white specks. The Bill is black, not without somewhat of red, shorter than in most others of this kind. It is taken among Reeds with snares. It hath a cry somewhat resembling the sound of Fullers striking of Wool.

Leonard Baltner describes his *Matkneitzel* (if at least it be the same bird with Gefner's *Matkern*) thus: It is a very fair beautiful bird. From the tip of the Bill to the end of the Claws it is a full *Strasbourg* Ell long. It weighs six Lots and an half, that is, three ounces a quarter: For a Lot is about half an ounce. It Outes are an Ell long. It frequents Waters, and seeks its meat in watery places. The Cocks are adorned with beautiful feathers, like those of *Partridges*, and have pale-red Feet. The feathers of the Hens are less beautiful, and their Feet grey. Some also weigh thirteen Lots, and are three quarters of a Ell long. These birds in figure, magnitude, and colour do very nearly resemble the Female *RUFFES*, which they call *REEVES*. Whether they be the same or not let the Virtuosi at *Strasbourg*, where they are found, examine.

CHAP.

CHAP. XII.

The North-Country Dunlin of Mr. Johnson.

IT is about the bigness of the *Jack-Snipe* or *Judcock*, hath a straight, channell'd, black Bill, a little broader at the end; oblong Nostrils; a blackish Tongue. The Throat and Breast white, spotted with black. The middle of the Belly is blackish, waved with white lines. The lower Belly, and feathers under the Tail white. All the upper side is red, every where spotted with pretty great black spots with a little white. Yet the Wings from a grey incline to a brown or dusky colour. The Legs and Feet are of a competent length, and black. The back-toe is the shortest. The Tail consists of twelve feathers, of which the two middlemost are dusky [brown] with one or two red spots: the rest from brown incline to white. It gets its food out of the mud.

The *Rotknussel* or *Gallinula melampus* of Gefner and *Aldrovand* differs not much from this bird.

CHAP. XIII. §. I.

The Stint, which the French call the Sea-Lark: *Schoeniclos* seu *Junco Bellonii*:
An *Cinclus* prior Aldrov?

IT is equal to the common *Lark*, or but very little less: For the shape of its body like to a *Snipe*. From Bill to Feet eight inches and an half long. Its Bill is straight, slender, black, an inch and half long, and like to a *Snipes* bill. The Tongue extended to the end of the Bill. The Feet dusky or blackish, with a tincture of green. The toes not joyned by any membrane. The back-toe small. The colour of the upper side of the body, excepting the prime feathers of the Wings, and first row of coverts, is grey, or cinereous, with black spots, or lines in the middle of each single feather. The feathers in the middle of the Back and upper side of the Wings have a tincture of red. [Mr. Willughby describes it a little differently thus: The middle parts of the feathers on the Head are black, the edges red or ruflet. The Neck is more of an ash-colour. The Back-feathers of a dark purple, with reddish ash-coloured edges. Those on the Rump of a lighter red, with black lines or streaks down their shafts.]

The Wings are long, and when folded up reaching to the end of the Tail. The quill-feathers of each Wing twenty four, of a dusky colour as far as they appear above the covert-feathers, for their bottoms are white, and the interior in order gradually more than the exterior to the nineteenth, which is almost wholly white. [Mr. Willughby in the bird he described observed the tips of the second row of Wing-feathers to have been also white, in the same proportion as in the *Sanderling*, making together a white line cross the Wing, yet narrower than in that. The exterior edges of the fifth, counting from the outmost, and of the subsequent to the eleventh are white. The four next the body are wholly dusky, and by little and little freightened into sharp points, and when the Wing is closed reach almost to the end of the Tail. The Tail is scarce two inches long, not forked, made up of twelve feathers, of which the two middlemost are longer than the rest, sharper pointed also, and darker-coloured. All the rest are of a pale ash-colour, without any cross lines or bars, only their outmost edges whitish. All the under-side of the body is white, only the Throat and upper part of the Breast clouded a little with dark-coloured spots. Mr. Willughby observed small brown spots under the Wings, and the Throat to be of an ash-colour, thick-set with black spots, down sometimes to the Breast.

The Liver divided into two Lobes, of which the right is much the bigger. The Stomach muscular.

These Birds live about the Sea-shores, and fly together in flocks. At *Weythebster* they call them *Parres*.

Bellonius his description of his *Junco* agrees in all points with this bird. His figure represents the Bill too short. The Bill of the *Cinclus* also in *Aldrovand's* figure is drawn too short.

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§. II.

§. II.

* The third Cinclus of * Aldrovand.

* Lib. 20.
cap. 56.

IT is of the same colours with the precedent, save that it hath a white Tail, adorned with transverse black lines: It hath also the same shape and make of body. It differs in the Bill; for that hath it of almost an even bigness, this thicker where it is joyned to the Head, and by degrees slender to the tip. It seems also to differ in the Legs, they being somewhat longer and thicker. In bigness it agrees, and hath also a common name with it, being called by our [the *Bolognese*] Fowlers, *Giaruncello*.

CHAP. XIV.

The Stone-Curlew: The Oedicnemus of Bellonius: Charadrius of Gesner,
* Aldrov. called at Rome, Curloctte.

* Lib. 13. c. 15.

ITS weight is eighteen ounces: Its length from Bill to Tail eighteen inches, to the points of the Claws twenty: Its breadth from tip to tip of the Wings extended thirty six inches. The length of the Bill, measuring from the tip to the angles of the mouth, two inches. The Bill is not much unlike a Gulls, but straight, sharp-pointed, black as far as the Nostrils, then yellow. The Irides of the Eyes and edges of the Eye-lids are yellow. Under the Eyes is a bare space of a yellowish green colour. The Legs are long and yellow. The Claws small and black. It hath only three fore-toes, wanting the back-toe. The outmost Toe a little longer than the middlemost; All joyned together by a certain membrane, which on the inside the middle toe begins at the second joint, on the outside at the first, and reaches almost to the Claws of the outer Toes. The Legs (as *Bellonius* observes) are very thick below the Knees, as if they were swollen, by reason of the bones, which are there great; wherefore that he might render the Bird more easie to be known, he named it, *Oedicnemus*. The upper Legs are above half way bare of feathers; which note alone, were there no other, argues this Bird to be a Water-fowl. The Chin, Breast, and Thighs are white: The Throat, Neck, Back, and Head covered with feathers, having their middle parts black, their lateral or borders of a reddish ash-colour, like that of a Curlew: Whence they of *Norfolk* call it, The Stone-Curlew.

In each Wing are about twenty nine quill-feathers; the first and second of which have a transverse white spot, else their exterior surface black: The four next to these black: The three following have their bottoms and tips white: Then succeed thirteen black ones; the last or next to the body are of the same colour with it. The first feathers of the second row are black: The rest have white tips, and under the tips a cross line or border of black. In the lesser rows of Wing-feathers is a transverse bed or bar of white. The coverts of the under-side of the Wings, especially those springing from the shoulders, are purely white. The outmost feathers of the Tail for the space of an inch are black, then white: The next to these, one on each side, are variegated, with one or two brown bars crossing the white part: The rest, the white by degrees fading and disappearing, become of the same colour with the body. The tips of the middlemost are a little black. The Tail is five inches long, consisting of twelve feathers. The guts great: The blind guts three inches long: The single umbilical blind gut half an inch. We bought this bird in the Market at *Rome*, and there described it.

It breeds very late in the year (saith *Bellonius*) for we found of the Young about the end of *October*, which could not yet fly. *Bellonius* when he travelled first in *England*, observed this Bird here; for the feathers and the Feet very like to a *Bullard*.

The learned and famous Sir *Thomas Brown* Knight, Physician in *Norwich*, informed us, that it is found about *Thetford* in *Norfolk*, where they call it the Stone-Curlew, and that its cry is something like that of a green Plover.

Another bird congenerous to this, wanting also the back-toe, (which *Aldrovandus* described from the intuition of a bare Picture) but different in that its Thighs are feathered, and its Toes without any intermediate membrane, see in his *Ornithology*,

Book 13.

Book 13. Chap. 15. I suspect it to be the same with the *Oedicnemus*, and those different notes to be but mistakes of the Painter.

The *Charadrius* of *Gesner*, which *Aldrovand* judges to be the same with our *Oedicnemus*, is a foolish and stupid bird. Being shut up in any room, it walks up and down, sometimes in a round about a Pillar or any other thing for a long time, and if any block or impediment be in its way it will rather leap over it, than decline from the right way. * It shuts not its Eyes though you put your finger to them. It is easily made tame, for when it is at liberty in the fields it is not much afraid of a man. It is a Water-fowl, and lives in fenny Meadows, or about Marshes. In houses also it catches Mice in the night time. I hear that it abounds in the Low Countries, that it wanders up and down in the night, and makes a noise like a Whistle, or Pipe.

SECTION VI.

Cloven-footed Water-fowl with short Bills, that feed upon Insects.

CHAP. I.

X The Lapwing or Bastard Plover: Capella five Vannellus.

THIS Bird is in all Countries very well known; and every where to be met with. In the North of *England* they call it the *Tewit*, from its cry. It is of the bigness of a common Pigeon, of eight ounces weight; thirteen inches and an half length, measuring from Bill to Claws, and not much less from Bill to Tail: Its breadth, taken between the tips of the Wings spread out, is twenty one inches.

The top of the Head above the Crest is of a shining black. The Crest springs from the hind part of the Head, and consists of about twenty feathers, of which the three or four foremost are longer than the rest, in some birds of near four inches length. The Checks are white; only a black line drawn under the Eyes through the Ears. The whole Throat or under side of the Neck, from the Bill to the Breast is black, which black part somewhat resembles a Crescent, ending in horns on each side the Neck. The Breast and Belly are white: As are also the covert feathers of the under side of the Wings. The feathers under the Tail are of a lovely * bright bay: Those above the Tail are of a deeper bay: The feathers next them are dusky, with a certain splendour. The middle of the Back and the scapular feathers are of a delicate shining green, adorned with a purple spot on each side next the Wings. The utmost edges of the tips of the middlemost of the long scapular feathers are whitish. The Neck also is of an ash-colour, with a mixture of red and some black lines near the Crest.

Of the master-feathers of the Wing the three or four outmost are black, with white tips: The following to the eleventh are black. From the eleventh they are white at bottom, the hindmost more and more in order than the foremost. Yet this white doth not appear in the upper side of the Wing, but is hid by the covert-feathers. Those next the body from the twenty first are green. The lesser covert-feathers are beautified with purple, blue, and green colours, variously commixed. The outmost feather of the Tail on each side is white, saving a black spot in the exterior Web. The tips of all the rest are white, and beneath the tips the upper half black, and the lower white. The Bill is black, hard, roundish, of an inch length. The upper Mandible a little more produced: The Tongue not cloven; but its sides reflected upwards make a channel in the middle. The Nostrils oblong, and furnished with a flexible bone. The Ears seem to be situate lower in this than other Birds: The Eyes are hazel-coloured.

The Feet are long, reddish [in some Birds brown.] The back-toe small. The outmost of the fore-toes joyned to the middle one at the bottom.

The liver is large, divided into two Lobes, with a Gall annexed. The Gizzard not so thick and fleshy as in granivorous birds, therein we found Beetles like to Meal-worms. It is infested with Lice like the *Tetrax*.

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* That black ring, representing a crescent, we spoke of.

The Hen is a little lesser than the Cock : Her throat is all white as low as the * collar : The bay colour under the Tail paler. Moreover, the outmost feather of the Tail is wholly white, wanting that brown spot. The colours also in the Cocks do somewhat vary, not answering always exactly in all things to our description.

It lays four or five Eggs, of a dirty yellow, all over painted with great black spots and streaks. It builds its Nest on the ground, in the middle of some field or heath, open, and exposed to view, laying only some few straws or bents under the Eggs, that the Nest be not seen. The Eyes being so like in colour to the ground on which they lie, it is not easy to find them though they lie so open. The Young so soon as they are hatched instantly forsake the Nest, running away (as the common tradition is) with the shells upon their heads, for they are covered with a thick Down, and follow the old ones like Chickens. They say, that a *Lapwing* the further you are from her Nest, the more clamorous she is, and the greater coil she keeps, the nearer you are to it, the quieter she is, and less concerned she seems : That she may draw you away from the true place, and induce you to think it is where it is not.

These Birds are wont to be kept in Gardens in the Summer time, in which they do good service in gathering up and clearing the ground of Worms and other Insects. Their flesh is indifferent good meat. In Summer time they scatter themselves about the Country to breed : In Winter time they accompany together, and fly in flocks.

CHAP. II.

Of the Plover : De Pluviali seu Pardale.

§. I.

The green Plover. Pluvialis viridis.

IN bigness it equals or exceeds the *Lapwing*, weighing about nine ounces ; being in length from Bill to Tail eleven inches, in breadth between the tips of the Wings extended twenty four.

Its colour on the top of the Head, Neck, Shoulders, Back, and in general the whole upper side is black, thick set with yellowish green spots. If you heed each single feather, you will find the middle part to be black, the borders or edges round about spotted with a yellowish green colour. The Head for the bulk of the body is greater than in the *Fringe* ; the Bill straight, black, of an inch length, furrowed about the Nostrils. The Neck short, equal to a *Lapwing*. The Breast brown, spotted with a yellowish green. The belly white, yet the feathers on the sides tipped with brown, and crossed also with brown lines.

Of the quill-feathers in each Wing the eleventh ends in a blunt point, those before it running out into sharp points on the outside the shaft, those behind it on the inside. All but the five next the body are brown. The shafts of the outmost eight or nine are half way white. The exterior edges of the fifth, and those following it, are a little white toward their bottoms. The inmost five next the body are of the same colour with the Back. The second row of Wing-feathers are brown, [or dusky] with white tips. The rest of the covert-feathers are on the upper side of the Wing of the same colour with the Back, on the under-side with the Belly. The Tail is short, made up of twelve feathers, of the same colour with the Back, when spread terminated in a circular circumference.

The Feet and Claws are black. It wants the back-toe : By which note alone it is abundantly distinguished from the other birds of its kind. Its Legs are long, as in all other birds which live about waters, and bare of feathers for some space above the knees. Its flesh is sweet and tender, and therefore highly esteemed, and accounted a choice dish, as well in *England* as beyond Seas.

This Bird from its spots, something resembling those of a *Leopard*, is called *Pardalis*.

§. II.

The grey Plover : Pluvialis cinerea, called at Venice, Squatarola.

IT is from Bill to Tail twelve inches long, to the Claws fourteen : Between the tips of the Wings spread twenty four inches broad. Its Head, Back, and lesser coverts of the Wings are black, with tips of a greenish grey. The Chin is white ; the Throat spotted with oblong, brown [or dusky] spots. The Breast, Belly, and Thighs white.

The quill-feathers in each Wing about twenty six : Of which the first or outmost are black : In the fourth the middle part of the outer edges is white, the white part in the five following being enlarged gradually. The outmost of the second row of Wing-feathers are also black. The tips of those next after the fourth are white, and the edges too after the tenth. Of the third row the foremost ten are black, with white tips. The Tail is three inches long, not forked, varied with transverse bars, or beds of black and white.

Its Bill is black, above an inch long, like to the rest of this kind : The Tongue not cloven : The back-toe very small : The fore-toes joined by a membrane at the beginning of their divarication ; that between the middle and inmost lesser : The Feet of a fordid green : The Claws little and black. It hath a Gall.

The flesh also of this Bird is very tender, savoury, and delicate ; and in no less esteem than that of the former.

CHAP. III.

The Dottrel : Morinellus Anglorum.

THE Males in this kind are lesser than the Females, at least they were so in those we hapned to see : For it might fall out to be so among them by some accident. The Female was almost ten inches long, the Male but nine and an half ; the Female nineteen inches and an half broad, the Male but eighteen three quarters : The Female weighed more than four ounces ; the Male scarce three and an half. The Bill, measuring from the tip to the angles of the mouth, was an inch long : The Head elegantly variegated with white and black spots, the middle part of each single feather being black. Above the Eyes was a long whitish line : The Chin whitish. The Throat is of a pale cinereous or whitish colour, with oblong brown spots. The Breast and under-side of the Wings of a dirty yellowish colour, the Belly white. Each Wing hath about twenty five prime feathers, of which the first or outmost is the longest, the tenth the shortest ; from the tenth to the twentieth they are almost equal : The rest to the twenty fourth are again longer the foregoing than the following. The first or Pinion-quill hath a broad, strong, white shaft : The three outmost are blacker than the rest, which are of a dusky [or brown] colour, having the edges of their tips whitish. The lesser rows of the Wing-feathers are brown, with yellowish white tips, but those next the quills blackest. The middle of the Back between the Wings is almost of the same colour with them. The Rump and Neck are more * cinereous. * Grey. The Tail is composed of twelve feathers, two inches and an half long, but the middlemost something the longer : The bottoms of all are cinereous, the tips white, the remaining part black : In the outmost feather the white part is broader, in the middle ones narrower : The edges also of the outmost feathers are whitish. The Legs are bare for a little space above the Knees, of a fordid or greenish yellow ; the Toes and Claws darker coloured than the Legs. The inner Toe joined to the middle only at bottom, the outer by a thick membrane as far as its joint. It wants the back-toe, wherein it agrees with the *green Plover*, from which yet it is sufficiently distinguished by its colour, magnitude, and other accidents. Its Bill is straight, black, and in figure like that of the *Plover*. It hath a fleshy stomach, in which dissected we found fragments of *Beetles*, &c. Its guts were fourteen inches and an half long. The Cock and Hen can scarce be known asunder, they are so like in shape, and colour.

It is a very foolish bird (saith Dr. Key in his Letter to *Gessner*) but excellent meat, and with us accounted a great delicacy. It is taken in the night time by the light of a Candle.

Candle, by imitating the gestures of the Fowl: For if he stretches out an Arm, that also stretches out a Wing; if he a Foot, that likewise a Foot: In brief, whatever the Fowl doth, the same doth the Bird; and so being intent upon mens gestures it is deceived, and covered with the Net spread for it. I call it *Morinellus* for two reasons, first, because it is frequent among the * *Morini*: And next, because it is a foolish bird, even to a Proverb, we calling a foolish dull person a *Dotterel*.

* *Hemming-*

Of the catching of *Dotterels*, my very good Friend Mr. *Peter Dent*, an Apothecary in *Cambridge*, a Person well skill'd in the History of Plants and Animals, whom I consulted concerning it, wrote thus to me. A Gentleman of *Norfolk*, where this kind of sport is very common, told me, that to catch *Dotterels* six or seven persons usually go in company. When they have found the Birds, they set their Net in an advantageous place; and each of them holding a stone in either hand get behind the Birds, and striking their stones often one against another rouse them, which are naturally very sluggish; and so by degrees coup them, and drive them into the Net. The Birds being awakened do often stretch themselves, putting out a Wing or a Leg, and in imitation of them the men that drive them thrust out an Arm or a Leg for fashion sake, to comply with an old custom. But he thought that this imitation did not conduce to the taking of them, for that they seemed not to mind or regard it.

CHAP. IV.

The Sea-Lark: Charadrius fide Hiaticula.

IN bigness it somewhat exceeds the common *Lark*: From the point of the Bill to the end of the Tail or Legs (for they are equally extended) being eight inches and an half long, a line of black compasses the base of the upper Bill. This black line from the corners of the mouth is produced through the Eyes as far as the Ears, and then turns up and passes cross the middle of the Head, encompassing a broad bed or fillet of white drawn from the inner corner of one Eye to the inner corner of the other. The hinder part of the Head is ash-coloured: The Chin white. The Neck encompassed by a double ring or collar, the upper white, which underneath reaches as far as the Bill, and under the Chin is dilated almost to the Eyes; the lower black, which is broader in the middle, and takes up part of the Breast, before all runs out toward the Bill. The Back and lesser covert feathers of the Wings are * ash-coloured. The Breast and Belly white.

* Or grey.

The outmost of the quill-feathers of the Wings is black, on the middle of the shaft only spotted with white, which colour spreads it self gradually and continually more and more in the following feathers, insomuch that the twentieth and twenty first are wholly white. Those next the body are of the same colour with the Back. The feathers of the second row have white tips, excepting the foremost or outmost. Hence, and from the white of the first row arises a long transverse white line in the Wings. The outmost feather of the Tail on each side is white, as also the tip and exterior half of the next; of the three following only the tips: The two middlemost are of the same colour with the Back, or a little darker. The Tail is two inches and an half long, made up of twelve feathers, of which the outmost are the longest, of the rest the interior are a little shorter in order than the exterior. [The Tail-feathers in divers birds vary in colour, for in some the two outmost feathers are wholly white, and the tips also of the middlemost.]

The Bill is short, scarce an inch in length, of two colours: For beneath toward the Head it is of a deep yellow or gold-colour more than half way, toward the point black. The upper Mandible a little longer, and somewhat crooked. [In others (perhaps they were young ones) we observed the whole Bill to be black.] The Tongue is not divided: The Eyes are hazel-coloured: The Legs and Feet of a pale yellow: The Claws black. It wants the back-toe. The outmost of the fore-toes is joyned to the middlemost by a membrane reaching to the first joynt. The Stomach hath not very thick muscles, in it dissected we found *Beetles*. The Gall-bladder is large.

It builds on the Sea-rocks, making its Nest of grafs, straws, and stalks of Plants: Its Eggs are of a greenish colour, spotted with brown, all the blunt end being dusky. It runs very swiftly on the shores, and makes short flights, singing or crying continually

continually as it flies. It is with us in *England* every where very common upon the Sea-coasts. We saw it also about the Lake of *Geneva*, and it hath been brought to us killed upon the banks of the River *Trent*, not far from *Nottingham*.

This Bird is the very same which *Margravins* describes, *Book 5. Chap. 5.* by the name of *Mutitui*, as he saith the *Brasilians* call it, as will clearly appear to him that shall but compare them together. So that it seems there are some Birds common to *Europe*, and even the Southern part of *America*. *Leonard Balthar* describes and pictures two sorts of this bird. Perchance his lesser kind is that which the *Welsh* call *Goligod*, and say is like a *Sea-Lark*, but less.

CHAP. V.

The Turn-stone, or Sea-Dotterel: Morinellus marinus of Sir Thomas Brown.
An Cinclus Turneri?

IT is lesser than a *Plover*, and something bigger than a *Blackbird*: in length from the tip of the Bill to the points of the Claws ten inches: In breadth between the extremities of the Wings extended twenty. It is long-bodied, and hath but an indifferent Head. The Cocks and Hens differ not in colours. Its Bill is streight, black, an inch long from a thick base lessening by degrees into a sharp point, something flat, (stronger and stiffer than in the *Woodcock* kind).

The colour of the Plumage in the Head, Neck, Shoulders, Wings, and upper part of the Breast is brown. [Mr. *Willughby* makes the feathers covering these parts to be black, or purplish black in the middle, cinereous, or of a white russet about the edges.] All the under-side, but the Breast, is as white as snow. The Plumage on the middle of the Back is white; but on the very Rump is a great, transverse, black spot. The long scapular feathers are brown, with edges of an ash-colour, or dirty white. The quill-feathers of the Wings are about twenty six, of a brown or dusky colour: But from the outmost three or four their bottoms are white, continually more and more, till in the nineteenth and twentieth the white spreads almost over the whole feather. In the second row the foremost feathers are wholly black: The tips of the following being white, together make a broad line of white cross the Wing. The edges of the lesser rows are red. Near the second joynt of the Wing is a white spot. The Tail is two inches and an half long, consisting of twelve feathers, of which the lower half is white, the upper black, yet the very tips white.

The Legs are short, of a Saffron or Orange colour. The Claws black: The Toes divided almost to the bottom, but the outmost and middle toe coupled by a membrane as far as the first joynt. It hath the back-toe.

The Liver is divided into two Lobes, of which the * *dexter* is much the bigger. I * That on the right side.
found no Gall, yet dare not say that it wants one. Upon the Western shores of *England*, about *Pensins* in *Cornwall*, and *Aberdare* in *Merioneth-shire* in *Wales*, we observed many of them, where they fly three or four in company: Nor are they less frequent on the Sea-coasts of *Norfolk*.

Our honoured Friend Sir *Thomas Brown* of *Norwich* sent us the Picture of this bird by the title of the *Sea-Dotterel*.

CHAP. VI.

* *The first Junco of * Aldrovand.*

* *Book 1. Chap. 55.*

IT is of the bigness of a *Sparrow*, hath a black, channelled Bill, sufficiently hard, and crooked at the end; the Tongue also channelled, and at the tip hard, and cloven. The upper part of the Head, Neck, and the Belly are of a chestnut-colour. All the under-side of the Neck and Breast white. All the other parts of the body from * dusky incline to black. The Tail is three inches long, consisting of ten feathers: The Legs and Feet dusky. The Cock differs from the Hen only in this, that in her the colours are more dull, in him more lively.

* Arc of a dark brown.

To this *Aldrovand* adds another, which being altogether of the same bigness, the same shape and fashion of body, and make of Bill and Feet, he thinks to be of kin to it, but to differ only in colour. For its Throat and Breast indeed are white, but its whole Belly from cinereous inclines to dusky [or brown.] The rest of the Plumage is dusky.

BOOK III. PART II.

Birds of a middle nature between Swimmers and Waders, or that do both Swim and Wade.

Of these there be two kinds, the one of cloven-footed Birds that swim, the other of whole-footed with long Legs.

SECTION I.

Cloven-footed Birds that swim in the Water.

I.

Such whose Toes have no lateral membranes, called WATER-HENS.

CHAP. I.

Of Water-hens or More-hens in general.

THe Characteristic notes of *Water-hens* or *More-hens*, by which they may be distinguished from other kinds of Birds, are a small Head, a slender, compressed, or narrow Body: A short Bill, moderately bending; short concave Wings, like to Hens; a very short Tail; long Legs; very long Toes: Short flights.

* i. e. Little Hens.

They are called **Gallinula* by modern Writers, a diminutive word from *Gallina*, which signifies a Hen, for the likeness of their bodies, (especially their Bills and Wings) and conditions to Hens.

CHAP. II.

Of Water-hens in particular.

§. I.

The common Water-hen or More-hen: Gallinula chloropus major Aldrovandi.

IN shape of body it is like a *Coot*, but smaller: Narrow-bodied, or very much compressed sideways (which is common to all this kind) contrary to the *Duck-kind*, whose bodies are broad, flat and depressed. The Hen weighed twelve ounces, the Cock fifteen. The length of the Hen from the point of the Bill to the end of the Feet was more than seventeen inches, to the end of the Tail thirteen and an half; of the Cock fourteen and an half. The extremes of the Wings extended were twenty two inches and an half distant:

The

The Bill from the tip to the corners of the mouth was more than an inch long, ^{The Bill,} straight, or but little bending: The nether Chap, as far as the angle, of a pale yellow, then red; the upper less yellow at the end; about the Nodhrills, and to the end of the bald part red. The bald part is round, and ends at the top of the Head, being like that of a *Coot*, save that the *Coot's* is white, but this Bird's red. The redness on the Bill is as it were plaistered on, and may be scraped off. The red part of the Bill is separated from the yellow by a round circumference a little elevated, so that in the middle of the Bill it is produced further than on the sides. ^{The Tongue,} The Tongue is pretty broad, ^{Eyes,} not cloven, rough at the end. The *Irides* of the Eyes are red. The lower Eye-lid is not feathered. [In the young birds neither the Bill, nor the bald spot in the forehead are red.] The Legs are green: The Claws of a dark brown, near black, indifferently long. The Toes long, as in the *Coot*; the middle the longest, next the outermost, all broader and plainer below than in the other cloven-footed birds for the use of swimming: The back-toe broad, as in *Coots*, serving them perchance as a Rudder, to steer and direct their course. The Legs are feathered almost down to the knees, between the feathers and the joint marked with a red spot.

From the Shoulders or setting on of the Wing all along its base or ridge, and to the very ends of the feathers runs a line of white. The longer feathers under the Wings are curiously adorned with white spots, or lines tending downwards. The Breast is of a lead-colour: The Belly inclining to grey or ash-colour. Under the Tail are white feathers; as it swims or walks it often flirts up its Tail, and shews the white, especially when it puts down its head to pick up anything. The Back and lesser rows of Wing feathers approach to a * ferruginous colour: Else it is all over blackish. In the * ^{Rufy,} Male the feathers under the Tail are whiter, the Belly more † cinereous, and the Back † ^{Ash-coloured or grey,} more ferruginous.

Its Liver is small; Gall-bladder great; the Gall within being of a greenish black ^{The Liver} colour. It will feed very fat. Its flesh is well tasted, and even comparable to that of ^{and Gall,} *Teal*. It gets its food on grassy banks and borders near Waters, and in the very ^{its food,} *Wa-* good meat. ters, especially if they be weedy: Feeding (I suppose) upon the water-Insects it finds among the weeds. It builds upon low trees and shrubs by the water side; breeding twice or thrice in a Summer, and when its young ones are grown up it drives ^{its breeding,} them away to shift for themselves. Its Eggs are sharp at one end, white, with a tincture of green, spotted with reddish spots. It strikes with its Bill like a Hen: It fits upon boughs, but those only that are thick and near the water. It lives about ^{Eggs,} *Motes* and great Pools of water near ^{Manners,} *Gentlemens* houses. It flies with its Feet hanging ^{Place,} down.

§. II.

The other green-footed Water-hen of Aldrovand, perchance our Water-Rail.

THIS Bird from the tip of the Bill to the end of the Tail is almost eighteen inches long. It hath a Bill two inches long, both above and underneath for some space yellow, the remaining part being black. The Neck and Head are black: The Back and upper part of the Wings of a chestnut-colour: The nether part of a dark cinereous: Only the extremes of the Wings are white. The lower Belly also is almost all white. On the sides towards the Wings it is covered with thick feathers. The Tail ends * sharp, being above of a chestnut-colour, underneath white. ^{* The Latine} The ^{is in axon, but} Thighs are covered with ash-coloured feathers, [varied lightly with transverse white ^{I suppose it is} borders, not altogether down to the knees.] The Legs are green: The Toes long, ^{misprinted} furnished with Claws a little crooked, broad, and plain underneath; perhaps that it ^{for its account,} may swim with them when there is need or occasion. The Female is in all parts paler than the Male.

This Bird, if it be not our *Water-Rail*, is, I confess, to me unknown. I do indeed suspect it to be the *Rail*, though, to say the truth, the marks do not agree. Wherefore I would not omit its description, that the Reader, comparing it with that of the *Rail*, may himself judge.

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§. III.

§. III.

Another green-footed Water-ben of Bellonius like to a Coot, perchance our Grinetta.

WE have necessarily separated the Water-ben [*la Poulette d'eau*] from the lesser and greater Coot [*de la Poule & Macroule*] because it swims not in the water, nor is Web-footed. We have imposed the name of Water-ben upon this Bird from its likeness, though it be much less; yet is it bigger than a Rail, so that it seems to partake of both. The Fowlers to whom we shewed it, seeing it to be like a Coot, would needs persuade me that it differed only in bigness, being not yet come to its full age and growth. Whereupon I did more diligently search out some discriminating notes: Among which this was the chief, that this Water-ben had green Legs and Feet, not unlike to a *Bittern*, and not so plain, nor having such broad appendant membranes as in a Coot. The Tail also of this Water-ben is longer, and the bare spot upon its forehead less. In colour it is indeed like to a Rail, but tending to that of a Coot: Wherefore at first sight I took it to be a Rail, but viewing it more carefully, I observed that it had white Eye-lids, which neither Rail nor Coot have. In the Tail were two white feathers, one on each side. Under the Breast it inclined a little to blue. The Back is of a deep chestnut colour. Some also are blacker than others, and have the folds of their Wings white; and moreover, another white line in the* lesser Wing, which its first feathers longways of the quill or shaft compose. The same meat was found in its Stomach as in the Rails and Coots. It hath a Breast-bone and a Hip-bone different from other Birds, yea, even from the Coot.

Its flesh is like that of the Morehen, tender, and of easy digestion: Its bones easy to be broken: Its Liver also brittle: Its Craw large: Its Guts and Entrails as in a Coot. When roasted also it is of the same taste with a Coot. It builds, breeds, and brings up its young like the Rail.

This Bird in many things resembles our Grinetta, or * *Gallinula polioptus minor* of Aldrovand, so that I doubt not but it is the same: Howbeit, I thought fit to insert its description in this work, that I might leave the Reader to the freedom of his judgment.

§. IV.

The Water-Rail, called by some the Bilcock or Brook-Ouzel: *Rallus aquaticus* * Aldrov. i.e. *Ortygometra Bellonii*: Also the *Gallinula chloropus altera*, Aldrov. And perchance the *Gallinula Serica* of the same: So of one species he makes three.

IT is like the common Water-ben, but less; bigger than a Quail; of a slender, narrow or compressed body: From point of Bill to the end of the Claws sixteen inches long, to the end of the Tail but twelve: According to our usual way of measuring sixteen inches broad.

Its Head is small, narrow, or compressed sideways. Its Bill, like the *Ruff*, about two inches long, straight, compressed likewise sideways, red, especially the lower Mandible, and lower part of the upper, for toward the top or point it is black, smooth, and hard. The Tongue reaches to the very end of the Bill, and is white and rough at the tip. It hath a round, black, bald spot or naked skin in the forehead, but much less than that of the Coot, so little that it is scarce observable. The colour of the Head, Shoulders, Back, covert-feathers of the Wings, in brief, the whole upper side is various of black or dark brown, and olive colour; each single feather having its middle part black, and its edges olive-coloured. [Mr. Willughby makes the colour of the borders or edges of the feathers a yellowish red or ruflet; and attributes white spots to the Head, which were not, or at least not observed in the birds seen and described by me.] The Chin is white, the Throat red, with a mixture of ash-colour; the extreme edges, and as it were fringes of the feathers being a little grey. The Breast is more blue, with a bed of white in the middle. On the Thighs and sides under the Wings grow black feathers, elegantly variegated with transverse white lines. The Belly is ruflet, with white feathers under the Tail, like the common Morehen, marked with one or two black spots. The Wings are hollow, the quill-feathers short, black, or very near it, in number twenty two. Along the base of the Wing is a line of white, as in the Morehen. The Tail is* short and black, only the edges

* To mislead, by which words and the following I do not well apprehend what our Author means.

* The lesser grey footed Water-ben.

* Ornithol. tom. 3. p. 455.

* Of about two inches length.

edges of the two middle feathers are red. The Legs and Feet are of a dark flesh-colour: The Legs strong: The Toes, as in the rest of this kind, very long, divided from the very rife, except that the outer Toe is joined to the middle by a membrane at the bottom. The Claws are of the same colour with the Toes.

It had a great, long, crooked Gall-bladder; and a large Gall-pore besides: Long blind-guts, filled with Excrements; a muculous Stomach, in which we found a shell-Snail.

It runs very swiftly, and hides itself about the banks of Rivers: It walks rather than swims in the water. It flies with its feet hanging down. It is called at Venice, *Forzane*, or *Porzana*, a name common to other Water-bens also.

§. V.

* The Velvet Runner: *Gallinula Serica* Gmelin. * Aldrov. Perchance the same with the precedent.

* Tom 5. p. 470.

THIS is a remarkable bird; very handsomely particoloured of black and red almost all the body over, (as far as I remember) except that the Belly is white. And because the black colour in its feathers shines like Velvet, I thought fit to make and impose upon it the German name *Sametbunte*. Its Legs are long and dark-coloured: Its Toes very long, but the back-toe short: Its Bill long. Thus far Geyner, and again in his *Epitome*: This Bird may be called *Gallina Serica*, because in it the black colour shines like silk. *Quere* whether this be not the *Ortygometra* of Bellonius? And we truly hitherto have been of that opinion, but then Geyner hath not well described it: Which yet is not at all strange, sith (as we see) he described it by memory.

§. VI.

A small Water-ben, called Grinetta in Italy; and at Milan Gillerdine: *Poliopus Gallinula minor*, Aldrov.

IT is less not only than the common Water-ben, but than the Rail, but in shape of body like. Its Legs and Feet are of the same, both figure and colour, with the common Water-bens, viz. a sordid green. The Toes very long, divided to the bottom: The Bill shorter than either the Rail or common Morehen, compressed or narrow, sharp-pointed, of a yellow colour, brighter at the head, darker toward the tip. The upper part of the upper Chap near the Head above the Nostrils is crusted over with a kind of yellow plaister. The Head, as in the rest of this kind, is little. The colour of the feathers in the middle of the crown is darker: From the Bill above the Eyes on each side is drawn a line of grey or pale ash-colour: Beneath about the Ears the feathers are of the same colour with the rest of the body; under the Throat again they are ash-coloured or blue. The Neck, both above and beneath, and all the Breast are particoloured, viz. of a middle colour between green, yellow, and dusky, elegantly sprinkled with black spots. [Mr. Willughby makes the Breast white or cinerous, the bottoms of the feathers being black, the Throat black, with white spots, the Chin of a dark ash-colour without spots.] The feathers on the crown of the head have their middle parts black, their edges red: Those on the Shoulders and middle of the Back their middle parts about the shaft black, their sides and tips of a fordid red, their utmost edges on each side white.

The quill-feathers of the Wings are all of a dark brown, with a certain tincture of red: The covert-feathers red, with transverse waved lines of white at intervals. The lateral parts covered by the Wings are clothed with brown feathers, variegated with transverse waved lines of white. The Tail is short, consisting of twelve feathers, of the same colour with the quills of the Wings, save that the middlemost on their lateral edges have something of white. But what is especially remarkable in the Tail is, that when spread it is not plain, as in most birds, but notably concave. The middle feathers are longer than the rest. Moreover, the Wings are very hollow, as in most Land-fowl of the Poultry-kind. The Gall is large, the Stomach muculous: In it we found seeds of Plants.

This sort of Water-ben we first saw and described at Milan, then at Florence, where the Fowlers call it *Tordo Gelfemino*, unless perchance that be a distinct kind; and lastly,

lastly, at *Valence* in *Spain*. That this is the *Gallinula polioptus* of *Aldrovand* the names imposed on it do perfwade us, though the descriptions do not in all points agree.

The Bird that I described at *Florence* was of the bigness of the lesser *Tringa*, long-bodied, with a small Head, Wings of a mean size, a short Tail, Legs bare for a little above the knees, very long Toes except the backone, which is shorter in proportion than the rest, and situate higher. The Bill, for the bigness of the bird, is of a good length, straight, narrow, or compressed sideways; of a greenish yellow colour: But the upper Mandible both at the base and toward the tip is darker coloured, and as it were of a dusky green. The Legs and Feet are of a fordid green, neither is the colour of the Claws different. In the colour of the feathers it agrees most with the described, save that in the middle of the Back between the Wings a black list runs down besprinkled with white spots, of a considerable length and breadth: to which also are two lines adjacent, one on each side, in the covert-feathers of the Wings, not parallel to the middle one, but running out wider toward the Tail. The Eyes are small, and their *Irides* of a greenish yellow. In the bird that Mr. *Willughby* measured the length from Bill to Claws was thirteen inches, from Bill to Tail nine and an half: The breadth between the tips of the Wings sixteen. The Bill, like that of the common *Water-hen*, from the point to the angles of the mouth scarce an inch long: The Tail two inches. Along the outmost edge of the Wing from the Shoulders to the very tip of the outmost pinion feather runs a line of white, as in the common *Water-hen*. This line of white was not in the Bird we described at *Florence*: Yet I persuade myself that both these descriptions are of one and the same Species of bird, differing either in Age or Sex.

§. VII.

* The *Water-hen* called by *Gesner* Ochropus: *Schmirring*, *Aldrov.* lib. 20. cap. 42.

SO he denominates it from the pale yellow or Brimstone-like colour of its Legs, (which appears also in its Bill to the middle part or further, for the forepart of it is black.) It is called in High Dutch *Schmirring*, a name (as I guess) framed in imitation of its voice or the noise it makes. It hath the greatest variety of colours of any bird of this kind; there appearing in it seven distinct ones (as the Picture shews.) For besides the yellow colour I spake of, every where all over the whole body appears a russet, [rustus:] In the ends of the shortest feathers of the Wings a red, like red Oker: A white both on the Head and about the Eyes, and also in the middle feathers of the Wings, and in the Belly. The longest feathers of the Wings are black, and elsewhere in the Back, Tail, Neck, and Wings are spots of black. The edges of the Eye-lids are tintured with a Saffron-colour. There is also something of brown and cinereous in the Wings. The Feet want the back-toe, unless the Picture deceives me. It builds among shrubs with moss and grass. Thus far *Gesner*. This Bird (if it be rightly described, of which we are very doubtful) we have not yet seen.

§. VIII.

* The Wyn-kernel or *Gallinula ochra* of *Gesner*, *Aldrov.* lib. 20. cap. 48.

I (saith *Gesner*) named this *Ochra*, from the greenish, but fordid and dark colour of almost the whole body, more dusky on the upper side. The Head, Neck, Breast, and Wings are adorned with points and spots of white. The Tail is in part white. The Bill partly purple, partly black. The Legs pale yellow.

§. IX.

* The *Land-hen*: *Gallinula terrestris* of *Aldrovand*. Perchance the *Land-Rail*.

WE suspect this Bird (however *Gesner* contradicts it) to be the *Land-Rail* or *Ortyxometra* of *Belonius*, however the Toes in the figure are drawn too too long. But that the Reader may satisfy himself whether or no we judge aright, we shall here put down *Gesner's* description of it.

In the whole habit and fashion of its body it is very like the *Water-fowl*, if you except only the Bill. *Gesner* having no Greek or Latine name for it, it may, saith he,

be called * *Trochilus terrestris*; (for there are also other *Water-Trochili*, likewise of the Hen-kind) such it is of the same † common kind, and runs swiftly, whence the *Grecians* gave it that name; howbeit some do call that very small bird the *Regulus* also by the name of *Trochilus*. This Bird runs very swiftly through shrubs, and sometimes leaps sideways. It flies ill, and with great difficulty raises it self from the ground up into the Air. So he. And in his *Epitomy* again he names it, the *Land-Trochilus* or *Land-Rail*, to difference it from that which lives about Waters, and adds, that *Belonius* his *Land-Rail* is another bird. About the *Lago maggiore* (so he goes on) some call it *Polle*, which is as much as a Pullet or Hen, by a name too general. The *German* Fowlers call it, *Eggenfchar*, *Heggefchar*, and *Hegfchar*, because they run in companies near hedges, where they are found after Hay-harvest. For the *Germans* call a hedge *Hegga*, or *Haga*, and a flock or troupe *Schara*: Or perchance because they dig the earth about hedges, for the word *Scharren* with us signifies to dig or scrape with the feet, as Hens are wont: Which whether or no these birds do is to me uncertain. There are some who call it periphrastically, *Ein grosse wasser Huhle*, that is, a great *Water-hen*. This Bird he thus briefly describes. It is thick and short-bodied, and shaped otherwise like its Picture, of which he there gives a draught, [scarce any bird hath longer Toes for its bigness. The hind-toe also is about half as long as the fore ones. The colours I do not well remember, but I think their Legs were greenish. The Back and Wings from a reddish colour inclined to brown. Its note (as they say) is harsh, Ger, ger, ger, something like a Serpents. And therefore it is also taken by Fowlers imitating its voice by a knife drawn through dry wood. But whereas he saith, that the *English*, accounting it a very delicate bird, use several snares and devices to catch it among the standing corn, he was certainly deceived by a false relation; for that *England* neither breeds nor feeds any such bird besides the *Land* and *Water-Rail*.

§. X.

The *Brazilian Water-hen*, called *Jacana*:

THIS most elegant Bird is of the bigness of a *Dove*, but hath much longer Legs, of a yellow colour mixt with green. The lower Legs are more than two inches long; the upper (for the greatest part bare, as in *Water-birds*) a little less. It hath four Toes in each foot, the middle of those three which stand forward two inches long, the other two a little shorter; the fourth or back-toe a foot or more long; all armed with yellow Claws, half an inch long. Its Tail is short like a *Water-hens*. The feathers on the Back, Wings, and Belly are mingled of green and black: Those under the Tail white: Those near the Neck, and on the whole Neck and Breast of the same colour with the feathers that are seen on the Necks of *Peacocks* and some *Pigeons*. It hath a small Head like a *Water-hen*, covered with a certain round membranous tegument, of the colour of a *Turcois* stone. Its Bill is straight, like a *Hens*, above an inch long, from the beginning to the middle of a rare scarlet colour, the remaining part being of an excellent yellow, wherewith something of green is mixt. It is very frequent every where in the fenny places or Marsh grounds of *Brazil*. Its flesh is edible, but not much valued.

§. XI.

The *Brazilian Water-hen*, called *Aguapecaca*.

IT is in bigness equal, and in shape like to the precedent, but different and inferior to it in colour. Its feathers on the Back are like those of the former; the Wings browner. It wants the Cap or Miter on the Head, and hath in each Wing on the inside a straight horn or spur, wherewith it defends it self.

§. XII.

§. XII.

The third Braslian Water-hen of Marggrave.

IT is for figure and bigness like and equal to the precedent, but different in colour. The whole Head, Neck, Back, and Tail are black, the beginning of the Wings brown: The remaining part green; the ends of the quill-feathers brown: Moreover, the Breast and lower Belly are of a brown colour, as also the upper half of the upper Legs. The Bill is straight, of a Saffron-colour, with a red skin at its rise, and on the fore-part of the Head. The Legs are bare, the Feet ash-coloured. In the fore-part of each Wing it hath the like horn or spur as the former, of a yellow colour.

* The horned bird. This is the * *Axis cornuta* of *Nierembergius*, or rather *Hernandez*, which the *Indians* (saith he) call *Tobualenachili*, or *Caput noturnum*.

§. XIII.

The fourth Braslian Water-hen of Marggrave.

IT is of the same figure or shape with the rest. Its Bill is yellow. It hath a red skinny Miter or Cap on its forehead near the rise of its Bill: It hath also processes extended down the sides after the manner of the * *Guiny Hens*. Its whole Head, Neck, Breast, and lower Belly are covered with black feathers. The Back, Tail, and beginning of the Wings with red, or light brown. The quill-feathers of the Wings are of a Sea-green, with black tips; but they are covered with those red [or russet] ones forementioned, and cannot be seen unless when the bird flies. Its Legs are long; its Toes also long: Each hath * four joyns, of an ash-colour. Each Wing in the fore-part hath a very sharp horn [or spur] of a Saffron colour.

* *Galline* No mistice, perchance he may mean *Turkeys*.

* I suppose he was herein mistaken, for no bird we ever saw hath an equal number of joyns in every toe save the Swift.

§. XIV.

A Water-hen, called by the Brasilians, Tamatia.

IT hath the Bill of a Sparrow-hawk, is of the bigness of *Tassana asu*, walking with a crooked Back, and crooked Neck. It hath a great Head, great, black Eyes, situate near the rise of the Bill: A Bill two inches long, more than one broad, like a Ducks indeed, but * sharp toward the tip: Its upper part black, its nether yellowish. The upper Legs are bare of feathers, and of a good length. It hath in each foot four Toes, three standing forward, one backward, long, as in *Water-hens*. The Legs and Toes are of a yellowish green colour. The Tail very short, not longer than in the *Tassana*. Its Head is covered with black feathers, the rest of its body with brown: But in the Belly some white feathers are intermingled.

* The Latine words are *antrivis acuminatum*.

CHAP. III. §. I.

* *Of the Porphyrio, or purple Water-hen.*

THIS Bird neither *Gesner*, nor *Aldrovandus*, nor we truly have hitherto seen, but Pictures of it only. It is (if the Pictures deceive us not) of the *Water-hen* kind. Its body is all over of a blue colour. The extreme half of the Tail is a whitish ash-colour: The Bill and Legs of a shining purple. So *Gesner* describes it by a Picture sent him from *Montpellier*. *Aldrovandus* describes it otherwise, as may be seen in *Book 20. Chap. 28.* of his *Ornithology*. Seeing therefore the Pictures of this Bird do so much vary, and none of those who have compiled Histories of Animals do profess themselves to have seen the *Porphyrio*, we did sometimes doubt, whether there were any such bird in nature, especially seeing some of those things which the Ancients attribute to it, as for example, that it hath five Toes in each foot, are without doubt false and fabulous. But because all the Pictures of it do agree in the figure of its Bill, Legs and Feet, and indeed the whole body, we have now changed our minds, and are more apt to believe the affirmative, viz. that there is such a

Porphyrio

Porphyrio as they picture, akin to the *Coots* or *Water-hens*. Let others, who have the hap to see it, describe it more exactly, and so remove all doubt and scruple concerning this matter out of the minds of the learned and curious.

§. II.

* *The Quachilto or American Porphyrio of Nieremberg.*

THE *Quachilto* doth imitate the watching and crowings of a *Cock*. Some call it *Tacacintli*. Late at night, and early in the morning it crows after the manner of *Cocks*. It is of a dark purple colour, with some white feathers intermixt. The Bill is pale at the beginning. In the young birds the bald part at the rise of the Bill is red. It is like a *Coot*. Its Legs are yellow, inclining to green, ending in four pale-coloured Toes, without any membrane. The Eyes are black, with a fulvous Iris [or circle about the Pupil.] It is a Marsh-bird, feeding upon fishes, it self being no unpleasant or ill-tasted meat.

CHAP. IV.

* *Aldrovands Italian Rail.*

* *Ornithol.* book 19. chap. 16.

THIS *Rail* (as *Gesner* describes it) is more a Water than a Land Fowl: And at *Mestre*, a Village not far distant from *Venice*, it is taken, not without great toil and expence, viz. in *Falcons*, or other Hawks, and a troupe of Servants, who wearing Buskins or high-shoes, do, in the room of hunting Dogs, wade up and down the shallow waters thereabouts, and put up those Birds with certain Clubs they carry, shaking and beating the shrubs and bushes where they lie; that so they may afterwards become a prey to the *Falcons* that wait for them. This is a very noted Bird in that City, but in my judgment much inferior for taste both to a *Thrush* and a *Quail*. *Aloysius Mundella*, principal Physician at *Brescia*, in his Letters to me, writes thus. This Bird differs from our * *Fulica*, in that it hath more white in the Wings, and about the Eyes. Its Bill is black; its Legs greenish. It hath no such dissected or scalloped membranes between the Toes, no baldness on the Head, as far as I gather from the Picture.

What Bird this is, and whether we have ever seen it, being so briefly described with a few, and some of those negative notes, we cannot certainly determine.

MEMB. II.

Cloven-footed, fin-toed Birds, of kin to the Waterbens.

§. I.

The Coot: Fulica.

IT weighst twenty four ounces: From Bill-point to Tail-end is sixteen inches long; to the Claws twenty two. The Bill is an inch and half long, white, with a light tincture of blue, sharp-pointed, a little compressed or narrow; both Mandibles equal. The feet bluish, or of a dusky green: The back-toe little, with one only membrane adhering, and that not scalloped, but extending all the length of the Toe. The inner fore-toe is a little shorter than the outer: All the Toes longer than in whole-footed birds. About the joyns of the Toes are semicircular membranes appendant, on the inner Toe two, the middle three, the outer four. These circular membranes are bigger, and more distinct on the inside of the Toes, so that the intermediate incisures or nicks reach to the very joyns. [This may be thus briefly expressed, The three fore-toes have lateral membranes on each side, scalloped, the inner with two, the middle Toe with three, and the outer with four scallops.] From the Bill almost to the crown of the Head arises an Excrecency or Lobe of flesh, bare of feathers,

* *calvitia*.

feathers, soft, smooth, round, which they call the * baldness. The feathers about the Head and Neck are low, soft, and thick. The colour all over the body black; deeper about the Head. The Breast and Belly are of a lead-colour. The Thighs covered with feathers almost down to the knees: Just beneath the feathers is a ring of yellow about the Leg. The first ten quill-feathers are of a dark, dusky, or black colour, the eight next lighter, with white tips; the last or next the body are of a deeper black. The Tail consists of twelve feathers, and is two inches long.

The Liver is great, divided into two Lobes, having also a large Gall. The blind guts are nine inches long, their ends for an inches space being reflected or doubled backwards. It builds its Nest of grass, broken reeds, &c. floating on the top of the water, so that it rises and falls together with the Water. The Reed, among which it is built: stop it that it be not carried down streams. This Bird in the figure and make of its body resembles a *Water-hen*, to which *genus* it ought without all doubt to be referred. It seldom sits upon trees. The flesh of it with us is accounted no good meat: In *Italy* it is more esteemed.

§. II.

* *Bellonius* his greater Coot, called by the French *Macroule*, or *Diable de mer*.

It always dives in fresh waters, and is of a colour so exquisitely black, as if it were laid on with a Pencil. The white bald spot on the Head is broader than in the common Coot: And it is somewhat bigger-bodied. It draws up its Legs, and hath broad Toes, divided from each other, like the common Coot.

SECTION II.

Whole-footed long-leg'd Birds.

CHAP. I.

* *The Flamant or Phœnicopterus*: *Phœnicopterus*.

It hath extraordinary long Neck and Legs. The Bill is broad, of singular, strange, unusual figure. For the upper Mandible is flat and broad, crooked, and toothed: The lower thicker than it: The tip of the Bill black, else it is of a dark blue.

The Neck and body are white: The quill-feathers of the Wings black: The covert-feathers are wholly died with a most beautiful bright purple or flame-colour, whence it took the names *Phœnicopterus* and *Flamant*.

It is whole-footed (as *Gesner* rightly hath it) from whom *Aldrovandus*, deceived (I guess) by the Picture of it dissenting, affirms the contrary, viz. that it is cloven-footed.

In Winter-time in hard weather it comes over to the Coast of *Provence* and *Languedoc* in *France*, and is often taken about *Martigues* in *Provence*, and *Montpellier* in *Languedoc*. We saw several cases of it dried at *Montpellier*.

The French call it *Flambant* or *Flamant*, rather from the flameous colour of its Wings and Feet, than because it comes from *Flanders* in the Winter-time to the Coasts of *Languedoc*. For I believe there was scarce ever seen about *Flanders* a bird of this kind, so far are they from being common there, and flying from thence into other Countries. Howbeit, the *Provençals* might perchance through mistake think so. Whence it comes, or where it breeds, is to me unknown.

It feeds upon *Periwinkles* and fishes. The Ancients reckon the *Phœnicopterus* Tongue among the choicest dainties. *Apitius*, the most profound gulph of gluttony and riot, (as *Pliny* relates) wrote, that a *Phœnicopterus* Tongue is of an excellent taste and relish.

CHAP.

CHAP. II.

* *The Trochilus, commonly called, Corrija*, * *Aldrov.*

* Lib. 19.
cap. 55.

This Bird hath long Legs, yea, the longest of any whole-footed † Fowl except the *Avocetta*: Wherefore because it runs very swiftly they call it *Corrija* [Courier] whence I conjecture it to be the *Trochilus*, which, as they write, runs along the shores with that celerity many times, that its running is swifter than its flying. It is a particoloured Bird, hath a straight yellow Bill, black at the tip: A wide slit of the mouth; black Eyes, compassed about with a white circle, which is environed by another spadiceous one. Underneath on the Belly it is white. Two white feathers, which yet have black tips, cover the Tail. The upper side, Head, Neck, Back, and Wings are mostly of a ferruginous colour. It hath (as I said) long Legs, short Thighs, Toes joyned together by membranes. Having not seen this Bird we have no more to add concerning it. Its figure somewhat resembles a *Larus*. *Aldrovandus* is mistaken in that he writes his *Trochilus* hath the longest Legs of any whole-footed bird but the *Avocetta*: For the *Phœnicopterus* hath much longer Legs than the *Avocetta* itself. But *Aldrovandus* is herein to be excused, for that he held the *Phœnicopterus* to be a cloven-footed bird.

CHAP. III.

The Avocetta of the Italians: *Recurvirostra*.

In bigness it somewhat exceeds a *Lapping*, weighing ten ounces and an half; being extended in length from the tip of the Bill to the end of the Toes twenty three inches and an half; to the end of the Tail but eighteen: In breadth, taken between the tips of the Wings spread, it is full thirty one inches. The Bill is three inches and an half long, slender, black, flat or depressed, reflected upwards, which is peculiar to this Bird, ending in a very thin, slender, weak point. The Tongue is short, not cloven. The Head is of a mean size, round, like a ball or bullet, black above, (save that the fore part of the Head is sometimes grey) which colour also takes up the upper side of the Neck extending to the middle of it. The colour of the whole under side of the body is a pure snow-white; of the upper side partly white, partly black, viz. the outmost quill-feathers of the Wings are above half way black, the rest white, as are also the feathers of the second row. The rest of the covert-feathers almost to the ridge of the Wing are black, which make a broad bed of black, not directly cross the Wing, but a little oblique. On the Back again it hath two black strakes, beginning from the point of the Shoulder or setting on of the Wing, and proceeding transversely till in the middle of the Back they do almost meet, being thence produced straight on to the Tail. The whole Tail is white, three inches and an half long, made up of twelve feathers. The Legs are very long, of a lovely blue colour, bare of feathers for almost three inches above the Knees. The Claws black and little. It hath a back-toe, but a very small one. The blind guts are slender, almost three inches long. The whole length of the Guts is three foot. It hath a Gall-bladder, emptying it self into the Gut by its own proper duct or channel, and a Gall-pore besides. The Stomach is small, in which dissected we found nothing but little stones, so that thence we could not learn on what it feeds. Indeed, the Bill being so slender, weak, long, and of so inconvenient a figure, turning upwards, one would wonder how it could gather its food, be it what it will.

Mr. *Willughby* describes the Wings thus. The interior scapular feathers are black, which make a long black spot in the middle of the Back. The covert-feathers of the upper part of the Wing, from the setting on thereof to the first joint, are white; from the first to the second joint the lesser covert-feathers are black; from the second joint to the roots of the greater quill-feathers white again. The first quill or pinion feather is wholly black, the succeeding have by degrees less and less black, till in the eight only the exterior tip remains black.

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We saw many of these birds both at *Rome* and *Venice*: They do also frequent our Eastern Coasts in *Suffolk* and *Norfolk* in Winter time. But there needs no great pains be taken or time spent in exactly describing this bird: For the singular figure of its Bill reflected upwards is sufficient alone to characterise and distinguish it from all other birds we have hitherto seen or heard of.

BOOK III. PART III.

OF WHOLE-FOOTED BIRDS with shorter Legs.

* Or such as have but three toes; and such as have four.

WHole-footed birds with shorter Legs we distinguish into * such as want the back-toe, and such as have it: These latter into such as have all four toes web'd together, and such as have the back-toe loose or separate from the rest: These latter again we subdivide into narrow-bill'd and broad-bill'd: The narrow-bill'd have their Bills either hooked at the end, or straighter and sharp-pointed. The hook-bill'd have their Bills either even, or toothed on the sides. Those that have straighter and sharp-pointed Bills are either short-winged and divers, called *Douckers* and *Loons*; or long-winged, and much upon the Wing, called *Gulls*. The broad-bill'd are divided into the *Goose*-kind, and the *Duck*-kind. The *Duck*-kind are either *Sea-ducks*, or *Pond-ducks*.

The general marks of whole-footed birds are, 1. Short Legs; Here we must except the *Phenicopter*, *Coriara*, and *Avosetta*: 2. Legs feathered down to the Knees: 3. Short hind-toes: 4. The outmost fore-toe shorter than the inmost: 5. Their Rumps less erect, than other birds: 6. Most of the broad-bill'd kind have a kind of hooked narrow plate at the end of the upper Chap of their Bills; their bodies flat or depressed.

N. B. Under the name of *whole* or *web-footed* we comprise some birds, which have indeed their Toes divided, but membranes appendant on each side, such are some of the *Divers* or *Loons*. These might more properly be denominated *fin-toed* or *fin-footed* than *whole-footed*.

SECTION I.

Whole-footed Birds that want the Back-toe.

CHAP. I.

The Bird called *Penguin* by our Seamen, which seems to be *Hoiers* Goifugel.

IN bigness it comes near to a tame *Goose*. The colour of the upper side is black, of the under white. Its Wings are very small, and seem to be altogether unfit for flight. Its Bill is like the *Auk*, but longer and broader, compressed sideways, graven in with seven or eight furrows in the upper mandible, with ten in the lower. The lower Mandible also bunches out into an angle downward, like a *Gull's* Bill. It differs from the *Auk's* Bill in that it hath no white lines. From the Bill to the Eyes on each side is extended a line or spot of white. It wants the back-toe, and hath a very short tail.

I saw and described it dried in the Repository of the Royal Society. I saw it also in *Tradescant's* Cabinet at *Lambeth* near *London*.

The Penguin of the *Hollanders*, or *Magellanic Goose* of *Clusius*.

The Birds of this kind, found in the Islands of the strait of *Magellane*, the *Hollanders* from their fatness called *Penguins*. [I find in *Mr. Terries* Voyage to the *East Indies* mention made of this Bird. He describes it to be a great lazy bird, with a white

white Head, and coal-black body. Now seeing *Penguin* in the *Welsh* Tongue signifies a white head, I rather think the Bird was so called from its white head; though I confess that our *Penguin* hath not a white Head, but only some white about the Eyes. This (saith *Clusius*) is a Sea-fowl of the *Goose*-kind, though unlike in its Bill. It lives in the Sea; is very fat, and of the bigness of a large *Goose*, for the old ones in this kind are found to weigh thirteen, fourteen, yea, sometimes sixteen pounds; the younger eight, ten, and twelve. The upper side of the body is covered with black feathers, the under side with white. The Neck (which in some is short and thick) hath as it were a ring or collar of white feathers. Their skin is thick like a *Swine's*. They want Wings, but instead thereof they have two small skinny fins, hanging down by their sides like two little arms, covered on the upper side with short, narrow, stiff feathers, thick-set; on the under side with lesser and stiffer, and those white, wherewith in some places there are black ones intermixt; altogether unfit for flight, but such as by their help the birds swim swiftly. I understood that they abide for the most part in the water, and go to land only in breeding time, and for the most part lie three or four in one hole. They have a Bill bigger than a *Raven's*, but not so high; and a very short Tail; black, flat Feet, of the form of *Geese's* feet, but not so broad. They walk erect, with their heads on high, their fin-like Wings hanging down by their sides like arms, so that to them who see them afar off they appear like so many diminutive men or *Pigmies*. I find in the Diaries [or Journals of that Voyage] that they feed only upon fish, yet is not their flesh of any ungrateful relish, nor doth it taste of fish. They dig deep holes in the shore like *Cony-burroughs*, making all the ground sometimes so hollow, that the Seamen walking over it would often sink up to the knees in those vaults. These perchance are those *Geese*, which *Gomora* saith are without feathers, never come out of the Sea, and instead of feathers are covered with long hair. Thus far *Clusius*, whose description agrees well enough to our *Penguin*; but his figure is false in that it is drawn with four toes in each foot.

Olaus Wormius * treating of this bird, to *Clusius* his description adds of his own observation as followeth. This Bird was brought me from the *Ferroyer* Islands; I kept it alive for some months at my house. It was a young one, for it had not arrived to that bigness as to exceed a common *Goose*. It would swallow an entire *Herring* at once, and sometimes three successively before it was satisfied. The feathers on its back were so soft and even that they resembled black Velvet. Its Belly was of a pure white. Above the Eyes it had a round white spot, of the bigness of a Dollar, that you would have sworn it were a pair of Spectacles, (which *Clusius* observed not) neither were its Wings of that figure he expresses; but a little broader, with a border of white.

Whether it hath or wants the back-toe neither *Clusius* nor *Wormius* in their descriptions make any mention. In *Wormius* his figure there are no back-toes drawn.

This Bird exceeding the rest of this kind in bigness justly challenges the first place among them.

CHAP. II.

The Bird called the *Razor-bill* in the West of England, the *Auk* in the North, the *Murre* in Cornwall: *Alka Hoiieri* in Epist. ad *Clusium*. *Worm. mus.*

THis is less by half than the *Penguin*, being not so big as a tame *Duck*: Between the tips of the Wings spread it was twenty seven inches broad. Its Head, Neck, Back, and Tail, in general its whole upper side is black. Its Belly and Breast as far as the middle of the Throat white. The upper part of the Throat under the Chin hath something of a dusky or purplish black. Each Wing hath twenty eight quill-feathers; the tips of all * to the eleventh are white. The Tail is three inches long, consisting of twelve feathers, the exterior shorter by degrees than the interior: The excess of the two middlemost above the next them is greater than that of the rest.

The Bill from the tip to the angles of the mouth is two inches long, of a deep black, narrow or compressed sideways. A little beyond the Nostrils in the upper Mandible there is engraven a furrow or incision deeper than that in the *Coulter-neck*. As far as

T t 2 this

* But the eleven outmost.

this groove the Bill is covered with a thick, short, soft down, like the nap of *Velez*, The upper Chap is crooked at the end, concave and overhangs the lower: Both are of equal length, channelled with two transverse furrows or grooves [the upper for the most part with three,] that next the Head, which is the widest, and almost crosses the whole Bill, being white. In these furrows there is some diversity in several birds, for some have more than two: Yet are the white lines like and equal in all. Besides from each Eye to the corner of the upper Mandible is a narrow white line drawn. The Mouth within is of a lovely yellow: The Eyes hazel-coloured. The Legs are situate as in the *Penguin* and *Coulteneb*, of a black colour, as are also the Feet and Claws. It wants the back-toe.

It lays, sits, and breeds up its Young on the ledges of the craggy Cliffs and steep Rocks by the Sea-shores, that are broken and divided into many as it were stairs or shelves, together with the *Coultenebs* and *Guillemots*. The *Manks* men are wont to compare these Rocks, with the Birds sitting upon them in breeding time to an Apothecaries Shop, the ledges of the Rocks resembling the shelves, and the Birds the pots. About the Isle of *Man* are very high Cliffs, broken in this manner into many ledges one above another from top to bottom. They are wont to let down men by ropes from the tops of the Cliffs to take away the Eggs and young ones. They take also the birds themselves when they are sitting upon their Eggs, with snares fastened to the tops of long poles, and so put about their Necks. They build no Nests, but lay their Eggs upon the bare Rocks. They fetch many circuits in getting up to their Nests, and if they have not aimed right, and so miss of them, they drop down into the Sea, and ascend up again by degrees.

All the birds of this kind that we know lay extraordinary great Eggs in proportion to their bodies: This birds are two inches three quarters long, the lesser ends not so sharp as in the *Guillemots*, white, varied with black spots, as *Hoierus* rightly describes them. They feed altogether upon fish.

CHAP. III.

* Tom. 3.
p. 210.

* *The Mergus* of *Bellonius*, * *Aldrov.* Perchance the same with the precedent.

* The cont.

Bellonius, in his Book of *Observations* writes, that there is a peculiar sort of *Scadiver* in *Candy*, differing from the * *Phalacrocorax*, and other divers, which he thinks to be the *Aethya* of *Aristotle*. The Inhabitants of the *Candy-shores* (saith he) call it *Utamania*. It is of the bigness of a *Teal* [*d'une Sarcelle*] hath a white Belly, a black Head and Back, as also Wings and Tail. This alone among whole-footed birds wants the back-toe. [Herein *Bellonius* is mistaken.] Its feathers are like down, sticking fast in the skin. Its Bill hath sharp edges, is hollow, and almost plain, for a good part of it covered with downy feathers; the upper Chap being black, the lower white: the crown of its Head is broad.

This bird in many things resembles the *Auk*, and perchance it may be the same, for its figure is not unlike: But if it be indeed, as it is described, no bigger than a *Teal*, and the lower Mandible of its Bill be white, it must be different.

CHAP. IV.

The Bird called by the *Welsh* and *Manks-men*, a *Guillem*; by those of *Northumberland* and *Durham*, a *Guillemot*, or *Sea-hen*; in *Yorkshire* about *Scarburgh*, a * *Skout*; by the *Cornish*, a *Kiddaw*: *Lomwia* *Hoieri* in *Epist.* ad *Clusium*.

* It is another Bird which the Scots about the *Wye* Island, and the *Northumbrians* about the *Farn Islands* call a *Skout*, viz. the *Alca* of *Hisr*.

IT is like the *Auk*, but greater, coming near to the bigness of a *Duck*: In length from Bill to Tail eighteen inches and an half; in breadth the Wings being spread out thirty. Its Head, upper-side of the Neck, Back, Wings, and Tail, and be-side, the Chin also as far as the middle of the Throat are of a dark brown, or black ash-colour: Its Belly, Breast, and the rest of its Throat are white, as in the *Auk*. The

tips

tips of the eleven foremost or outmost Wing-feathers of the first row are white, as in the *Auk*. The Tail is two inches long, consisting of twelve feathers, the middlemost the longest, the rest by degrees shorter and shorter to the outmost.

The Bill is straight, sharp-pointed, black, from the tip to the angles of the mouth, almost three inches long, round. The upper Chap near the point hath on each side a small angular process or tooth which is not received in the lower, but overhangs it on both sides when the mouth is shut. The Tongue undivided: The mouth within yellow. The Feet situate very backward near the Tail, as in the precedent, of a black colour, as are also the Claws. It wants the back-toe.

The skin of the stomach within is yellow: The Gall-bladder large: The Testicles in the Males great, from which the femal vessel with various winding and reflections tend to the vent.

It lives and companies together with the *Auks* and *Coultenebs*: Breeding after the same manner, and in the same places: But it is a simpler bird, and more easily taken.

It breeds yearly on the steep Cliffs and inaccessible Rocks of the Isle of *Man*, as do the *Auks*, &c. Likewise on an Island or Rock called *Godrevy*, not far from *St. Ives* in *Cornwall*: Also on *Presthall* Island, about a League distant from *Beaumaris* in the Isle of *Anglesey*, where for want of fresh water no body at present dwells, nor are there any buildings remaining, save an old ruinous Chappel dedicated to *St. Siricius*. My Lord *Bulkeley* is proprietor of this Island. Moreover, this Bird frequents and builds on the *Farn Islands* near the coast of *Northumberland*; and the Cliffs about *Scarburgh* in *Yorkshire*, in the Summer-months.

This lays the biggest Eggs of all this kind, more than three inches long, very sharp at one end, and blunt at the other, of a bluish green colour, some varied with black spots or strokes, some without any.

Mr. *Johnson* hath observed these birds to vary somewhat in colour, some having black backs, some brown or bay: Perchance these may be Hens, those Cocks.

CHAP. V.

The Bird called *Coulteneb* at the *Farn Islands*, *Puffin* in *North-Wales*, in *South-Wales* *Gulden-head*, *Bottle-nose*, and *Helegug*, at *Scarburgh* *Mullet*, in *Cornwall* *Pope*, at *Jersey* and *Guernsey* *Barbalot*: *Anas Arctica* *Chf.* *Pica marina* vel *Fratercula Gessneri* * *Aldrov.*

* Tom. 3.
p. 215.

THis is lesser than the tame *Duck*, extended in length from Bill to Feet twelve Inches. Its Bill is short, broad, and compressed side-ways, contrarily to the Bills of *Ducks*, of a triangular figure, and ending in a sharp point, the upper Mandible arcuate, and crooked at the point. Where it is joyned to the Head a certain callous substance encompasses its base, as in *Parrots*. Between this callous body and the first furrow, anon to be described, are long holes for the Nostrils produced by the aperture of the mouth. The Bill is of two colours, near the Head * cinereous or livid, toward the point red; it hath three furrows or grooves impressed in it, one in the livid part, two in the red. The Mouth is yellow within. The Eyes grey or ash-coloured. The Eye-lids are strengthened with a black cartilage: in the lower is a caruncle protuberance of a * livid colour, in the upper a small triangular excrescency of the same colour.

* Ash-coloured.

The Feet of some are yellow; I suppose these are young ones, of others red, situate backwards almost in the same plain with the Belly, as they are in *Dougers* or *Looms*, so that the Bird stands and walks almost perpendicularly erected upon the Tail. It wants the back-toe. The inmost of the fore-toes is the shortest, the middlemost the longest. The Claws are of a dark blue, inclining to black. The top of the Head, the Neck, and Back are black: The Breast and Belly white. A ring or muffler of black produced from the Neck encompasses the Throat. The sides of the Head from the crown, to the now mentioned muffler are white, or of a very pale ash-colour, so that the Eyes and Ears are included in these white spaces.

Their Wings are small, made up of short feathers, nevertheless near the superficies of the water they fly very swiftly. They say that out of the sight of the Sea they cannot

* Black and blue, the colour in the skin after a stroke or contusion.

cannot fly at all, nor unless they do ever and anon dip their Wings in the water. The Tail is two inches long, made up of twelve feathers, all black. The Stomach within is yellow: The Liver divided into two Lobes, with a Gall annexed.

They build no Nest, but lay their Eggs upon the bare ground. They breed in holes under ground, which either they dig for themselves, or borrow of the Rabbits, whom they drive out and dispossess of their burrows. They lay but one Egg apiece (which is especially remarkable) but if you take away the Egg out of any Nest, that Bird will lay a second; if you remove that, a third, and so on to the fifth. It lays huge Eggs for its bigness, even bigger than *Hens* or *Ducks*, of a reddish or sandy colour, much sharper at one end than *Hens* Eggs, and blunter at the other.

In the Islands of *Man*, *Bardsley*, *Caldey*, *Farn*, *Godrevy*, *Sillicy*, and other small desert Isles near the Sea-shore they breed yearly in great numbers: And not only in Islands, but also on Rocks and Cliffs by the Sea-side, about *Scarborough*, *Tenby*, and elsewhere.

In the Summer time they abide in the places mentioned, being busy in breeding and feeding their Young: In the beginning of Autumn they fly away; returning again the next Spring. Whither they fly, and where they spend their Winter we know not. It is reported, that in the latter end of *March*, or beginning of *April* there come over first some Spies or Harbingers, which stay some two or three days as it were to view and search out the places they use to breed in, and see whether all be well: Which done they depart, and about the beginning of *May* return again with the whole troop of their fellows. But if that season happen to be stormy and tempestuous, and the Sea troubled, there are abundance of them found cast upon the shores lean and perished with famine. For they cannot, unless the Sea be calm, either proceed in their journey, or sit for their living. In *August* they all depart, nor are they seen any more any where about our Coasts till the next Spring. The Young which cannot then fly they leave to shift for themselves. All these things are to be understood also of the *Auk* and *Guillemot*. For these three kinds do for the most part fly together, and build in the same places.

A certain Fisherman told us, that in the middle of Winter he once found a *Puffin* under water, torpid, among the Rocks not far from * *Bardsley* Island, which being again cast into the Sea straightway sank to the bottom. Believe it that will. Mr. *F. J. Jephson* sent us one killed in the fresh waters not far from *Sheffield* in *Yorkshire*, much less than this we have described, which yet I think differed only in age; for all marks agreed.

Of all the birds of this kind hitherto described I think it to be true which Mr. *Johnson* hath observed, that the under side is so far white as it is immersed in the water in swimming, the upper side as far as it is extant above the water being black.

The *Auk*, *Guillemot*, this Bird, and perchance all the rest of this kind and the *Soland-Goose* lay but one Egg, and bring up but one young one at once, which is a thing very remarkable and worthy the observation: But that Egg for the bigness of the bird is an extraordinary great one.

CHAP. VI.

The *Greenland-Dove* or *Sea-Turtle*: *Columba Groenlandica* dicta.

Hither also is to be referred that bird which in *Holland* they call the *Greenland-Dove*, for that also wants the back-toe. It is like the *Colunderb*, but less: Its Legs alike red: Its Bill longer, not compressed sideways, sharp-pointed, a little crooked at the end, and prominent.

It hath a large white spot on the upper surface of each Wing, else it is all over black, of the colour of a *Coot*. We counted in each Wing twenty six or twenty seven quill-feathers.

I guess this bird to be the same with the *Puffin* of the *Farn* Islands, which they told us was of the bigness of a *Dove*: Its whole body in Summer-time being black, excepting a white spot in each Wing, but turning white in the Winter: That it had a narrow, sharp Bill, that it built in the holes of the Rocks, and laid two Eggs. I persuade myself also, that it is the same with the *Turtle-dove* of the *Bass* Island near *Edinburgh* in *Scotland*, being thereto induced by the agreement of names:

Why

Why they call it a *Dove* or *Turtle* I cannot certainly tell. It is indeed about the bigness of a *Turtle*, and lays (they say) two Eggs at once like them, and possibly there may be some agreement in their voice or note.

SECTION II.

Whole-footed Birds with four fore-toes, or four toes all web'd together:

CHAP. I.

The *Pelecan*: *Onocrotalus five Pelecanus*, *Aldrov.*

The length of this Bird from the point of the Bill to the end of the Feet or of the Tail was sixty inches: Of the Bill it self from the tip to the angles of the mouth fourteen. The space between the Eyes and the Bill is * na- * Bare of feathers. Its feathers are almost like a *Goose*: Those on the top of the Head longer than the rest, standing up like a Crest. The colour of the whole body white: Yet the Neck is yellowish. The shafts of the back-feathers are black. The Tail and covert-feathers of the Wings are of a dusky ash-colour, as in *Geese*: The ends of the quill-feathers black. The Tail is about seven inches long, made up of twenty or twenty two feathers, of almost equal length, save that the outmost are a little shorter than the middlemost. Each Wing hath twenty eight quill-feathers. The Bill toward the Head is of a Lead-colour, the end being yellowish: The upper Mandible broad and flat, the nether as it were two long ribs or spars joined at one end, with a thick yellow skin interceding, which reaches backwards to the Throat beyond the Bill. At the end of the Bill is a little knob or protuberance, but the utmost tip of the Bill is hooked. The Nostrils are situate at the base of the Bill near the Head; above the cranny or furrow running along the length of the Bill, as in the *Soland-Goose*, and are round. The Eyes are of a yellowish ash-colour, or rather whitish: The Legs and Feet of a lead colour. The flanks bare above the knees. All the four toes are web'd together, as *Aldrovand* hath rightly observed.

We saw and described this Bird in the *Royal Aviary* in *St. James Park* near *Westminster*. The Emperor of *Russia* by his Embassadors sent to his Majesty in the year 1666 among other rarities presented the King with two birds of this kind.

Franciscus Stellutus, in a Letter to * *Jo. Faber* at *Rome*, describes a *Pelecan* he saw * See his Annotations on Fabricius thus. This Bird is much bigger than the biggest *Goose*, yea, equal to, or bigger than a *Swan*. [That which *Gejner* described weighed twenty four pounds, the rest of twelve ounces the pound: Of *Aldrovands* two one weighed eighteen pounds, the other twenty five.] Of a whitish colour, yet not purely white, but clouded with something of dusky or red. Nor is this colour uniform all the body over, for the Wing-feathers are darker than of the rest of the body. Its Feet are made up of three Toes joined together by a membrane, and a Heel behind. [Here by inadvertency I suppose *Stellutus* is mistaken, for all four toes are web'd together.] The Bill almost as long as ones arm, but not toothed. The tip of the upper Chap is bent downward, with a hook like the claw of some bird. I could not see any Tongue, [neither could *Faber*, who saw this same bird afterward at *Rome*, find the Tongue, though he searched diligently for it] but where the root of the Tongue was fixed I observed certain perforate bodies. On the crown of the Head there stood up some feathers elevated above the rest, imitating a Crest. The bag which hangs down under the Bill, and which makes the *Pelecan* greatly different from other birds, is membranaceous, which it sometimes contracts and draws up to the Bill, that it is scarce conspicuous, other times it suffers to be so dilated as to receive and contain many (* *Faber* saith thirty) pounds of water: The membrane being so stretched and distended, that it appears transparent, many fibres and veins running up and down through it. I wondered most (they are *Faber's* words) when the Bill being opened very wide, I saw the whole head of a man of great stature received in that vast gulf of the

* *Craw.*

* He so calls
this bag un-
der the Bill.

* *Craw.* In the Head I discovered two manifest but small holes reaching to the brain, which served for smelling. Wanting a Tongue it must make that uncouth sound, like the braying of an Ass, by the help of its *Larynx* only. I heard not this, but the Keeper of this Bird, that carried it up and down to shew, when he provoked it, striking it on the Bill, and the Bird seemed angry, and ready to peck or strike with its Bill, so that it would sometimes catch hold of his hand, it made a noise somewhat like the cry of a Goose, and that a small and hoarse one.

The noble Lord *Jo. Carolus Schaad* related to me, that a great while since there were three *Pelecanus* shot in the River *Danow* running through *Bavaria*, two of which were kill'd, the third brought alive to the Duke of *Bavaria's* Court, where it lived forty years. It was much delighted in the company and conversation of men, and in Music both Vocal and Instrumental. For it would willingly stand by those that sung or sounded the Trumpet, and stretching out its Head, and turning its Ear to the Music, listened very attentively to that sweet harmony, though its own voice is said to be like the braying of an Ass. This confirms what we read in *Aldroand* of the age of the *Pelecan*, which was kept fifty years at *Mecklin*, and was verily believed to be eighty years old. Thus far *Faber*.

It is singular in this Bird, that its bones are pellucid, solid, without any marrow at all within; and that the division of the Wind-pipe into two branches is near about the middle of the stomach, which I never observed in any other bird, saith *Aldroand*.

This bird feeds upon fish, as do all the rest of this kind. *Faber* saw it swallow two fresh *Hake's*, that weighed about four pounds, whole.

Many of them frequent the River *Danow*, but breed not there. *Belonius* saith he saw flocks of *Onocrotali* in *Egypt*: *Olaus Magnus* writes, that they are frequent in the Northern Countries. *Ovidius* reports, that there is often seen a great flock of them about *Panama* in the *West Indies*, where they breed on the adjacent Rocks and Island. There are said to be of them likewise on the *Caspian* Sea. Of old time it seems they have frequented the Coast of *Italy* about *Ravenna*, for *Martial* hath it, *Tempus Ravenarum guttur Onocrotali*. *Matthioli* makes them very common in the Sea-coasts of *Tuscany*, especially about the Cape *Argentaro*, being frequently found about *Pont Hercule*, and the Lake of *Urbicello*, where the Inhabitants call them *Agroti*. What credit this deserves (saith *Faber*) I know not, this I know, that many of *Matthioli* his Country men have scarce ever seen so much as the Picture of an *Onocrotalus*, which if they were so common there, would not sure be accounted such strange things as to be carried about to shew at *Rome*, and in other places of *Italy*.

CHAP. II.

The Soland Goose: Anser Bassanus.

IN bigness it equals a tame Goose. It is by measure from the tip of the Bill to the end of the Feet thirty four inches long: To the end of the Tail thirty nine. Its Wings are of an extraordinary length, for being extended their extreme tips are seventy two inches distant.

Its Bill is long, straight, of a dark ash-colour, a little crooked at the point, having on each side not far from the hook an angular *Appendix* or tooth, like the Bills of some rapacious birds. Beyond the Eyes the skin on the sides of the Head is bare of feathers, as in the *Cormorant*. The Palate, and all the inside of the Mouth is black: The slit of the Mouth huge wide. At the angle of the * *Opistion*-like bone is a very small Tongue: The Ears of a mean size: The Eyes hazel-coloured. [In another bird they were yellow.] By a diligent search we could find no Nostrils, but in their stead a furrow or cranny extended on each side through the whole length of the Bill. If one view them attentively the edges of both Mandibles appear serrate, that it may more firmly hold the fish that it catcheth. It hath four fore-toes; for all its four toes are web'd together, and stand forward. The Legs are feathered down to the knees: The Feet and Legs, as far as they are bare, black: The Claw of the middle Toe is broad, and pectinated on the inside as in *Heron's*. The Plumage is like that of a Goose. The colour of the old ones that have moulted their Chicken-feathers is all over white, excepting the greater quill-feathers of the Wings, which are black, and the

* Os hyoides.

the top of the head, which with age grows yellow. The young ones are particular of white and dark brown or black, especially on the upper part of the body: The number of quill-feathers in each Wing is about thirty two. The Tail is white, about seven inches long, consisting of twelve feathers. The skin is very full, sticking loose to the flesh.

The Bird we described was taken alive near *Colehill*, a Market Town in *Warwickshire*, not being able by reason of the length of his Wings to raise himself from the ground, on which, I know not by what chance, he had fallen down. The blind guts were very short: Scarce any footstep remaining of the channel conveying the Yolk into the guts.

In the *Bass* Island in *Scotland*, lying in the middle of *Edinburgh* Frith, and no where else, that I know of, in *Britany*, a huge number of these Birds doth yearly breed. Each Female lays only one Egg. Upon this Island the Birds, being never shot at or frightened, are so confident as to alight and feed their young ones close by you. They feed only upon fish, yet are the young Geese counted a great dainty by the *Scots*, and sold very dear, so that the Lord of the *Isle* makes no small profit of them yearly. They come in the Spring, and go not away again before the Autumn. Whither they go, and where they Winter is to me unknown.

CHAP. III.

The Cormorant: Corvus aquaticus.

IN bigness it is not much inferior to a Goose. The colour on the upper side is dusky, shining with an obscure tincture of green; exactly like that of a *Shag*. The Breast and Belly are white. Each Wing hath about thirty quill-feathers, the extreme tips whereof, as also of those of the second row, are a little ash-coloured. The Tail is extended beyond the Feet, being an hand-breadth and an half long, when spread ending in a round circumference, being concave on the under side, consisting of fourteen stiff hard feathers, not being in any part covered with feathers incumbent on it either above or beneath. The Bill is like that of the *Shag*, three inches and an half long, hooked at the end; the upper Mandible black with sharp edges; the sides of the lower Mandible compressed and broad. The Tongue small, and almost none. The Eyes situate nearer the aperture of the Mouth than in most other birds, having cinereous circles round the Pupil. The Legs are strong, thick, but very short, broad, and flat, at least in the young ones. The Feet and Claws black, covered with a skin not divided into perfect scales, but cancellated. It hath four Toes in each foot, all web'd together by a broad black membrane, and standing forward, the outmost the longest, the rest in order shorter. The Claw of the middle Toe is ferrate on the inside. But what is especially remarkable in this Bird, wherein it chiefly differs, the bigness excepted, from the *Shag*, is, that the *basis* of the nether Chap is covered with a naked yellow skin or membrane, like the *Elk*.

Its stomach is membranaceous, but its upper part thick and glandulous: Within were bones of fishes which it had devoured, and also one fish entire; that was a small *Codfish*; also many little, long, blackish worms of the figure of Earthworms. Such like worms also Mr. *Willughby* found in the stomach of a young one, which he got at *Severus* in *Holland*, where many birds of this kind build upon trees. The Guts are long, having many revolutions: The blind Guts very small: The Liver large, divided into two Lobes, the right one the bigger. It is infested with Lice of a pale red colour, having a great black spot in the middle of their Backs.

They are wont (saith * *Jo. Faber*) in *England* to train up *Cormorants* to fishing. When they carry them out of the rooms where they are kept to the fish-pools, they hood-wink them, that they be not frightened by the way. When they are come to the Rivers they take off their hoods, and having tied a leather thong round the lower part of their Necks that they may not swallow down the fish they catch, they throw them into the River. They presently dive under water, and there for a long time with wonderful swiftness pursue the fish, and when they have caught them they arise presently to the top of the water, and pressing the fish lightly with their Bills they swallow them; till each Bird hath after this manner devoured five or six fishes. Then their Keepers call them to the suit, to which they readily fly, and little by little one

U u after

* In his Annotations upon *Reich's* his Animals,

after another vomit up all their fish a little bruised with the nip they gave them with their Bills. When they have done fishing, setting the Birds on some high place they loose the string from their Necks, leaving the passage to the stomach free and open, and for their reward they throw them part of their prey they have caught, to each perchance one or two fishes, which they by the way as they are falling in the air will catch most dextrously in their mouths. This kind of fishing with *Cormorants* is it seems also used in the Kingdom of China, as * *Nierenbergius* out of *Mendoza* relates.

* Lib. 10.
chap. 54.

This Bird builds not only on the Sea-Rocks, but also upon trees. For (saith a certain *Englishman* mentioned by *Aldrovand*) I have seen their Nests on the Rocks near the mouth of the River *Tine*, and in *Norfolk* upon high trees together with the *Herons*. Which something we also have observed. For on the Rocks of *Preßholms* Island near *Beaumaris* we saw a *Cormorant* Nest, and on the high trees near *Sevchenburgs* in *Holland* abundance. Which thing is worthy the notice-taking; For besides this and the following, we have not known or heard of any whole-footed bird that is wont to sit upon trees, much less build its Nest upon them.

CHAP. IV.

The *Shag*, called in the North of England, the *Crane*: *Corvus aquaticus minor*
five *Graculus palmipes*.

IT is bigger than a tame *Duck*, weighing almost four pounds. Its length from Bill-point to Tail end was two foot and an half. Its breadth the Wings being spread forty four inches. Its Bill straight, slender, neither flat, nor compressed sideways, but rather round, from the tip to the angles of the mouth four inches long; the upper Mandible black, hooked at the end, the lower from green of a pale yellow. It hath a wide gape. The Tongue is small, and almost none. The Nostrils were not conspicuous, at least I could not discover any that it had. The Eyes small, situate lower and forward than is usual in other birds. Its body is small, flat and depressed like the *dun Divers*: The upper side of a black purplish colour, or black, with a dark tincture of green, shining like silk. The under-side is dusky, but in the middle of the Belly inclining to ash-colour. Under the Chin it is white, behind the Vent blacker than the rest of the Belly. The Tail is an hand-breadth and an half long, composed of twelve feathers, hard and stiff, the middlemost being the longest, and the outmost the shortest, so that being spread it seems to resemble an hyperbolical circumference. Each Wing hath thirty feathers in the first row. * The Wings when closed reach no further than the base or beginning of the Tail. The Legs are short, broad, compressed, feathered down to the Knees. The skin of the Legs is cancellated, not scaly. It hath four Toes, all connected by intervening membranes, armed with black Claws; the outmost Toe the longest, the rest in order shorter. The soles of the Feet and back-sides of the Legs are black: The membranes connecting the Toes dusky. The Claw of the middle toe is ferrate on the inside. It hath a huge, long, membranous stomach, which in the birds we dissected was full of small fishes. It swims in the Sea with its Head erect, its body almost immersed in the water. When a Gun is discharged at it, as soon as it sees the fire flash, immediately it pops under water like a *Deucker*, so that it is a very hard thing to shoot it.

* This mark
agrees also
to the *Graculus*
*add.

It differs from the precedent, 1. In bigness, being much less: 2. In the colour of the Belly, which in this is blackish, in that white: 3. In the number of the feathers of the Tail, which in this are but twelve, whereas in that they are fourteen: 4. In that the claw of the middle toe in this is ferrate, as in *Herons*, in that only sharp-edged. [Mr. *Johnson* gives the *Cormorant* a ferrate Claw, and denies it to this. Perchance herein there may be variety, Nature (as they term it) sporting it self, and not observing constantly the same rule:] 5. That in this there is not so much bare skin at the base of the Bill as in that, nor of the same yellow colour: 6. Lastly, in the slenderness and length of the Bill.

This Bird also builds on trees: Its Eggs are long and white.

CHAP.

CHAP. V.

* The *Sula* of *Hoier* * *Clus*, near of kin to, if not the same with the *Soland-goose*. * *Austr. ad lib. 5. cap. 6. exotic.*

FROM the bottom of the Neck to the Rump, measuring along the Back, it was a *Roman* foot long. From the top of the Head to the Back were eleven inches. The Neck was as much about. The length of the Bill (which was very sharp-pointed and strong) was five inches and an half. The thicker part of the Bill, and that about the Eyes was black. The compass of the body was full twenty four inches, that is, two *Roman* feet. The Wings were more than a foot long; but the longer feathers of the Tail did not exceed the length of seven inches. It had but slender and infirm Legs, and those not more than two inches long, and wholly of a black colour, as were also the Feet, which were very broad, consisting of four Toes, of which the outmost, and that next it (which were the longest) consisted of three articulations, the third of two, the least of one, each armed with a small claw, except the second, the Nail whereof is a little broader than the rest, and ferrate on one side; but they are all joined together by a black membrane. The longer prime feathers of the Wings are all black, as are also those three, which are longest, and lie uppermost, and take up the middle part of the Tail. The rest of the body was covered with white feathers, which yet in the Back were something yellowish, as if they were strowed with clay or dust.

This Bird in many things agrees with the *Soland-goose*, yet in some it differs, viz. the sharpness of the Bill, the black colour about the Eyes, the smallness of the Legs, and the black colour of the middle feathers of the Tail. But I suppose *Clusius* was mistaken in the number of the joints of the outer Toe, for the outer and middle Toe in no bird that I have yet hapned to see, except only the *Swift*, do agree in the number of joints: Nor doth the outer Toe consist of three articulations, but four, the middle of three, the inner of two, and the least or back-toe of one.

Clusius took this description from a dried bird, sent by Dr. *Henry Hoier*, Physician in *Bergen in Norway*, to Dr. *Peter Panm*, first Professor of Physick in *Leyden*. It is (he saith) called *Sula* by the Inhabitants of the Islands *Ferryger*, where it is taken. Those Islands, *Hoier* writes in his Epistle to *Clusius*, are said to be so called from the abundance of feathers there.

CHAP. VI.

The *Tropic Bird*.

IT is of the bigness of a *Duck*, hath a red Bill, about two inches long, somewhat bending downward, and sharp-pointed. A line of black is drawn on each side from the corner of the mouth to the back of the Head. The Belly is white:

The Back also is white, but variegated with transverse lines of black thick set, which make it very beautiful to behold. The Wings are very long, yet each single feather short, as in the *Soland-goose*. In the outmost quill-feathers the one Web, i. e. that on the outside the shaft is black, the other or inner Web white; in the next to these the middle part of the feather along the shaft is black, the edges on both sides white; the next to these are all white; those next of all to the body black, and longer than the rest. The Feet are black, the Legs white: All the four Toes web'd together. In the Tail (if one may rely upon the stiff skin, or credit the relation of those those that sent it) are only two very long feathers, of about eighteen inches, narrow, and ending in sharp points. This description I took from the case of the bird preserved in the Repository of the *Royal Society*.

It is called the *Tropic-bird* because it is found about the Latitude of the Tropic circles, and no where else, so far as hath been by our English Travellers hitherto observed.

My honoured and ingenious friend, Mr. *Martin Lister* of *York*, takes this to be the bird described in the History of the *Caribbee* Islands in these words: *There are seen near these Islands, and sometimes at a great distance from them in the Sea, certain birds*

U n s perfectly

perfectly white, whose Beaks and Feet are as red as Coral. They are somewhat bigger than Crows: They are conceived to be a kind of Herons, because their Tails consist of two long and precious feathers, by which they are distinguished from all other birds frequenting the Sea. This, saith Mr. Lister, can be meant of no other than the Tropic-bird: But then it is wrong described, with red legs, and a perfectly white body.

CHAP. VII.

* The Anhinga of the Tupinambæ a people of Brasil. Marggrav.

* *Merzi aquatic.*

* The word is *Itamali*, signifying little hooks.

* In Germany the women wear great round fur-caps as big and round almost as Turbans.
* Or their beginning perchance he may mean near the ridge.

IT is an elegant sort of * *Diver*. Its body (excepting the Neck) is of the bigness of a common tame Duck: Its Bill straight, not thick, very sharp, three inches long, the foremost half both above and below having a double row of very sharp * teeth inclining backwards. Its Head is small, oblong, resembling a Serpents, a little more than an inch and half long: Its Eyes black, with a golden circle: Its Neck slender, round, a foot long: Its body but only seven inches. Its Legs are short: The upper two inches long, and feathered; the lower scarce an inch and half. It hath four Toes, three turned forwards, joined together by membranes, after the manner of Ducks or Cormorants, the fourth shorter, extended sideways below, joined to the rest by a membrane; very sharp, crooked Claws: A broad Tail, ten inches long, consisting of twelve feathers. The Wings end about the middle of the Tail. The Bill is grey, and after its rife a little yellowish. All the Head and Neck are covered with very fine feathers, to the touch as soft and sleek as Velvet, on the upper side of the Head and Neck of a colour from grey inclining to yellow: Under the Throat and beneath the Neck of a grey colour, like the fur of those skins called *Verhselle*, of which womens * Caps are made, which fur they resemble both to the touch and sight. The whole breast, lower Belly, and upper Legs are covered with soft feathers of a silver colour: The beginning of the Back with brown ones, each whereof hath in its middle an oblong spot of a whitish yellow colour, so that it appears speckled: The rest of the Back hath a black Plumage. It hath long Wings, at the * setting on covered with the like short feathers as the beginning of the Back. Then follows a row of half grey, half black ones, that is, on one side the shaft gray, on the other black: But the prime feathers are black. The Tail consists of black and shining feathers, whose ends are grey. The Legs and Feet are of a colour from a dark yellow inclining to grey. It is very cunning in catching of fish. For after the manner of Serpents, first drawing up its neck, it darts forth its Bill upon the fishes, and catches them with its Claws. I have eaten of its flesh, but it is not much better than the flesh of a Gull.

SECTION III.

Whole-footed Birds, having the back-toe loose, with a narrow Bill, hooked at the end, and not toothed.

CHAP. I.

* Of the Arterna of the Tremiti Islands: De Ave Diomedea.

THIS Bird *Aldrovandus* sets forth for the *Diomedea avis*, induced thereto by this argument chiefly, because the present Inhabitants of the *Diomedean* Islands, called now *Tremiti*, do affirm thereof what *Pliny* of old concerning the *Diomedean Birds*, viz. that they are found in no other place but in those Islands. His description he partly borrows of *Gesner*, partly takes from a Picture of the Bird.

They

They are (saith he) of the bigness of a good corpulent hen, but have pretty long Necks and Legs. Their colour is dusky, or a dark ash, and (if I be not mistaken) they have some white under their Bellies, as wild Pigeons sometimes have. [My Bird on the under-side was almost wholly white.] Its Bill is very hard, and hooked at the end like an Eagle, but not so much, of a bright red, if I well remember. [I believe he did not well remember this, for the Bill in my Bird was of a pale yellow, all but the hook, which was black.] Its Eyes fair, of a fire-colour, not very great. For I did once see one, which being smitten with a rod on the Head opened its Eyes and cried out, but shut them presently again, not being able to bear the light of the Sun. And again: Their colour is not simply white (as *Pliny* writes) but inclining to cinereous, as in *Fulica* (he means a Bird of the Gull-kind) to which also he compares them. Whether they have toothed Bills or not, I did not observe, but they have them strong and pretty long. Thus far *Gesner*. Which notes (saith *Aldrovandus*) do for the most part agree exactly to my Bird, which had it not a hooked Bill, one might not unfitly judge to be of the great Gull-kind: It doth so resemble them in the whole body, but especially in the Wings. The Feet are of the same colour with the Bill, as are the Legs also.

But this description is not much to be confided in, being partly borrowed of *Gesner*, (who had it from the relation of a certain friend, who described it by memory) partly took from a Picture, or a dried case of the Bird sent him out of the Island. Those who happen to travel to the Islands called *Tremiti*, would do well to enquire diligently concerning these Birds, or rather themselves procure and exactly describe them, that so we may not be any longer without a true and perfect history of them.

CHAP. II.

The Puffin of the Isle of Man, which I take to be the Puffinus Anglorum.

MR. *Willughby* saw and described only a young one taken out of the Nest, who makes it equal in bigness to a tame Pigeon. Those which I saw dried in the Repository of the *Royal Society*, and in *Tradescants* Cabinet, seemed to me somewhat bigger. Its colour on the Head, Neck, Back, and whole upper side is dusky or black, on the Breast and Belly white. The Bill is an inch and half, or it may be two inches long, narrow, black, and for its figure something like to a *Lapwing's* Bill, the upper Chap being hooked at the end, like a *Cormorant's*. Its base is covered with a naked skin, in which are the Nostrils. From the Nostrils on each side a furrow or groove is produced almost to the hook. The Head is blacker than the rest of the Back: The Wings long: The Tail an hand-breadth long, and black. The Feet underneath black; above, the outer half of each foot is black, the inner of a pale or whitish flesh-colour, so that the middle toe is partly white, partly black. It hath a small back-toe, and black Claws.

For its extraordinary fatness its flesh is esteemed unwholesome meat, unless it be well seasoned with salt.

At the South end of the Isle of Man lies a little Islet, divided from Man by a narrow channel, called the *Calf of Man*, on which are no habitations, but only a Cottage or two lately built. This Islet is full of Conies, which the Puffins coming yearly dislodge, and build in their Burroughs. They lay each but one Egg before they fit, like the *Razor-bill* and *Gull*; although it be the common persuasion that they lay two at a time, of which the one is always addle. They feed their young ones wondrous fat. The old ones early in the morning, at break of day, leave their Nests and Young, and the Island it self, and spend the whole day in fishing in the Sea, never returning or once setting foot on the Island before Evening twilight: So that all day the Island is so quiet and still from all noise as if there were not a bird about it. Whatever fish or other food they have gotten and swallowed in the day-time, by the innate heat or proper ferment of the stomach is (as they say) changed into a certain oily substance [or rather chyle] a good part whereof in the night-time they vomit up into the mouths of their Young, which being therewith nourished grow extraordinarily fat. When they are come to their full growth, they who are intrusted by the

* Lord of the Island draw them out of the Cony-holes, and that they may the more readily know and keep account of the number they take, they cut off one foot and of *Druid*,
relieve

* The fame is reported of the French *Macrus*, per chance the same bird with the Puffin.

relieve it; which gave occasion to that Fable, that the Puffins are single-footed. They usually sell them for about nine pence the dozen, a very cheap rate. * They say their flesh is permitted by the *Romish* Church to be eaten in *Lent*, being for the taste so like to fish.

Gefner, and *Aldrovand* following him, from the relation of a certain *English* man, write, that they want hard feathers, being covered only with soft feathers, or a kind of down: Which is altogether false, they being furnished with sufficiently long Wings and Tail, and flying very swiftly. They say it is a foolish bird, and easily taken. We are told that they breed not only on the *Calf of Man*, but also on the *Silly Islands*. Notwithstanding they are sold so cheap, yet some years there is thirty pounds made of the young Puffins taken in the *Calf of Man*: Whence may be gathered what number of birds breed there.

CHAP. III.

* The Brazilian Maiaguè of Pifo.

* The *Cor-morant*.

Maiaguè, also received into the number of whole-footed, edible, but Sea wild-fowl, is of the bigness and shape of a *Goose*; not unlike to those great black diving birds of our Country, having in like manner the end of their Bills hooked and fitted for ravin: So that it seems to resemble *Gefners* * *Corvus aquaticus*. It hath a thick, round Head; shining Eyes; a long Neck, decently bowed like a *Swan*. The whole Bird is of a dusky and blackish colour, only the forepart of the Neck adorned with yellow feathers. It lives in the Sea about the mouths of Rivers: But builds its Nest and lays its Eggs on the shore. It is a swift bird, swims and dives well, and cunning in avoiding and escaping the snares of the Fowlers.

Its flesh is excellent, and good meat, especially if it be young, but because it feeds always upon fish it is disapproved and rejected by some.

Whether this Bird hath all its four toes web'd together or not Pifo doth not tell us, therefore we have subjoyned it to those which have the back-toe loose, although we suspect that it doth rather belong to the former genus.

CHAP. IV.

The Shear-water.

Our learned and worthy friend Sir *Thomas Brown* of *Norwich* among the designs and Pictures of many other birds, sent us also that of this, with a short history of it as followeth. The *Shear-water* is a Sea-fowl, which fishermen observe to resort to their Vessels in some numbers, swimming swiftly to and fro, backward, forward, and about them, and doth as it were, *radere aquam*, shear the water, from whence perhaps it had its name. It is a fierce and snapping fowl, and very untractable. I kept two of them five or six weeks in my house, and they refusing to feed, I caused them to be crammed with fish, till my Servant grew weary, and gave them over: And they lived fifteen days without any food. So far Sir *Thomas*. This Bird, according to the Picture of it, hath a great head like a *Gull*: Its upper part [Head and Back] were of a dark brown or blackish: Its Chin, Throat, and Breast white: Its Feet of a flesh-colour: Its Bill long, round, hooked at the end like a *Cormorant*, and blackish: Its Wings long, when gathered up reaching to the end of the Tail.

SECTION IV

SECTION IV.

Of whole-footed Birds with the back-toe loose, having a narrow Bill, hooked at the end, and toothed, called *DIVERS*, in *Latine*, *MERGI*.

CHAP. I.

The *Goosander*. *Merganser*, * *Aldrov.* *Harle*, *Bellonii*.

* *Orvi. Lat.*
book. 15.
chap. 62.

ITs weight was almost four pounds: Its length from the tip of the Bill to the end of the Tail or Claws (for they were equally extended) twenty eight inches: Its breadth, the Wings being spread, forty. It is long-bodied: Its Back broad and flat. The Head and upper part of the Neck is of a very deep shining green, almost black: The lower half of the Neck is of a glossy white. Yet the upper side of the bottom of the Neck, the middle of the Back, and the interior scapular feathers are black [the exterior are white.] The lower part of the Back is of a pale ash-colour. On both sides near the Rump, and on the very Rump and Thighs the feathers are variegated with transverse * dusky lines. The Tail is made up of eighteen feathers, wholly cinereous. Each Wing hath about twenty six prime feathers, the ten outmost black; the four next also black, but tipped with white: The five succeeding white, with their bottoms black: The remaining six or seven next the body white, with their exterior edges black. In the second row of the Wing those incumbent on the white quill-feathers are white from their tips to the middle, beneath black. Thence as far as the bastard Wing all are white: But between those white ones and the long scapular feathers some black ones intervene. Whence if you take the long scapular feathers, which cover the Back, for part of the Wing, the Wings will be (as *Aldrovandus* describes them) black toward the back, next white, with a certain paleness; then black again, but more remotely; after that again white, the extreme feathers at last being black. The whole under-side of the body (excepting the Wings, which are white underneath) of a faint yellow or *Isabella* colour. The exterior feathers of the Thighs are elegantly varied with transverse waved lines of a whitish and blackish colour, alternately placed.

* *Orrey*, for they are made up as it were of innumerable little black points or specks.

The Bill measured from the tip to the corners of the mouth exceeds the length of a mans middle finger: The lower Mandible black; the upper along its middle or upper part black, on the sides red; the tip being black and hooked, both upper and lower toothed on both sides like a Saw, the teeth inclining inward. The Tongue and Palate are yellow.

It hath not a Crest properly so called on the Head, but the feathers are more loose, and stand more staring upwards than ordinary, whence also the Head seems to be bigger than indeed it is. The Ears are round; the Nostrils large, the *Bridles* of the Eyes of a sanguine colour. The Legs and Feet are of an elegant red-lead colour. The back-toe broad, with an appendant membrane. It hath a huge bony labyrinth on the wind-pipe just above the divarications and besides, the wind-pipe hath two swellings out one above another, each resembling a powder-puff.

The Stomach is scarce muscous; out of it dissected we took a *Roach* and an *Eel*, whence it is manifest, that the bird feeds upon fishes. It hath a gall-bladder. The blind guts were two or three inches long, and full of Excrements.

The *Dun-Diver* or *Sparlin-fowl*: *Merganser* *fixmina*. *Mergus* *citratus* *longiroster*, *Gefn.* & *Aldrov.*

The Sexes in this kind of bird differ extremely from one another in colour, so that both *Gefner* and *Aldrovand* do set them forth for different species, calling the Female, *Mergus* *citratus* *longiroster* *major*.

The Head of this (which we take to be the Female of the precedent) is of afordid red. The feathers on the Crown of the Head stand out somewhat, and seem to bend backward in form of a crest or topping. The Chin is white: The whole Back

of

of bluish-ash-colour; the Fowlers call it Dun, whence this Bird also is by them called the *Dun Diver*. The under-side of the body is of the same colour as in the Male. The quill-feathers of the Wings also do not much differ as to their colours. The Bill and Feet agree with those of the Male. The Wings in both Sexes are short, and little for the bulk of the body; notwithstanding by the very quick agitation of them, it flies exceeding swiftly near the surface of the water.

The Stomach of this Bird is as it were a Craw and a Gizzard, joyned together. The upper part resembling the Craw hath no wrinkles or folds in its inner membrane, but is only granulated with small papillary glandules, resembling the little protuberances on the third ventricle of a Beef, called the *Manifold*, or those on the shell of a *Scallop*.

CHAP. II.

The Bird called at Venice, Serula: *Mergus cirratus fuscus*: *Anas (ut puto) longirostra Gessneri, Aldrov. t. 3. p. 281.*

THIS Bird is very common at Venice. In bigness it comes near to the common *Duck*. All its Head and the upper part of its Neck are of a dark fulvous colour, but the crown of the head darker or blackish. It hath a pretty long crest or tuft on its head hanging down backward. The Back is dusky, or of a very dark cinereous. The Throat for an inch and half space is white, below grizzled of black, white and red. The whole Belly white. The Bill from the tip to the angles of the mouth three inches, slender, and of a round figure: The lower Mandible wholly red, hath in the end an ash-coloured oval spot, the upper is of a dark brown above with some mixture of green, red on the edges, hooked at the end, and marked with a whitish oval spot: Both toothed on both sides along the edges with teeth like those of a Saw inclining inwards. The Eyes of a sanguine colour. The Wings are very short and little for the bigness of the bird, having each about twenty five or twenty six feathers in the first row. Of these the outmost ten are black, the eleventh hath the tip white, and the three next in order still more, the following six have their upper halves white: The rest are indeed white, but have their edges black, some on one side only, some on both. Of the second row those that cover the white ones of the first are themselves white half way. Above toward the base of the Wing is a great white spot, beginning from the bastard Wing. The coverts of the under-side of the Wing, and the interior bastard wing are white; but those under the outmost quill-feathers are dusky. The Tail is short, consisting of eighteen feathers. The Legs short: The Feet red, or of a deep Saffron colour. The Wind-pipe at the divarication hath such a vessel as the precedent, and besides above swells out into a puff-like cavity. In the stomach we found a *Mullet*.

This Bird is not much more than half so big as the precedent: It differs also in its colour, its crest, the white spot below the bastard Wing, and other accidents. We suspect the Bird described was a Female, and that its Male represents the *Goosander*, though we have not as yet happened to see it; unless perchance it be that whole skin stuff we saw in Sir William Fosters Hall at *Bamberg* in *Northumberland*, which had on each Wing a white spot, and two small transverse black strakes. We cannot but wonder (if the Male of this Bird be such a one as the *Goosander*) that among so many Females at Venice we should not see one Male. Mr. *Willughby* saw and described at Venice another Bird of this kind, perchance specifically different from this, under the name of *Cokall*; for 1. It was less: 2. It had no Labyrinth. This makes us doubt again concerning the Sexes of these birds; for in others of the *Duck-kind* the Females have no labyrinth; whereas in the *dun Diver*, which we take to be the female of the *Goosander* we found a large labyrinth; and yet in this lesser Diver, called *Cokall*, it seems there was none; so that we will not be very confident that the *Goosander* and *Dun Diver* differ no more than in Sex. This Bird *Leon. Balmier* calls *Klein Merck*, i. e. a little Diver.

Gessner besides these sets forth four or five species of this kind of birds, whose descriptions were sent him by a certain German. But those descriptions are so short, general, and obscure, that we cannot thence certainly learn what birds the Author means.

CHAP.

CHAP. III.

The * *Mergus Rheni* of *Gessner, Aldrov. tom. 3. pag. 275.*

* Diver of the River Rhine.

IT is in bigness equal to a *Duck*, and the most *Duck-like* of any of the *Mergi*: Its body all over particoloured of black and white: Its Bill and the space about the Eyes black. On both sides the back of the Head are black spots: The rest of the Head is partly black, partly dusky or cinereous. The lower or fore-part of the Neck with the Belly are of a white colour, but varied here and there with cinereous points or spots, which in the lower part of the Belly and sides being drawn out in waved lines, make a very pretty shew, and pleasant to behold. The Legs grow backwards about the bottom of the Belly. The Feet and Toes are dusky, the membranes on the inside black. The Tail black: The Wings and whole back distinguished with several black and white spaces alternately. Some call this Bird a *White Nun*.

I suspect that this Bird was no other than our *Albellus*, next to be described: Only the bigness and want of a crest forbid it. Perchance *Gessner* might describe it from the relation of others, or from a Picture. I am sure *Leonard Balmier*, a Fisherman and Fowler of *Strasbourg*, who did very diligently observe, gather together, and cause to be painted all the birds frequenting the *Rhene* thereabouts, gives us no other bird of this kind but the *Albellus*, to which also he gives the title of *White Nun*.

CHAP. IV.

The other *Albellus* of *Aldrovand, tom. 3. p. 279. the Mergus major cirratus* of *Gessner, Aldrov. tom. 3. p. 276. We may call it with the Germans the White Nun.*

IN bigness it comes near to a *Wigeon*; weighing about twenty four ounces. From the point of the Bill to the end of the Tail, or of the Feet it was by measure eighteen inches and an half long: between the tips of the Wings extended twenty seven inches broad. The Bill an inch and half, or near two inches long.

Its Head and Neck were white, excepting a black spot under the Crest (which it hath hanging down backward from behind its Head) encompassing the Crest, and ending in an acute angle below, and another on each side extending from the angles of the mouth to the Eyes. The Breast, Belly, and whole under-side is purely white. As for the upper side, all the Back is black. The long scapular feathers incumbent on the back are white. At the setting on of the Wing on each side there is a crooked line of black, half encircling the Neck just above the shoulders, and higher up the Neck, where the black we mentioned in the middle of the Neck begins, there is another such like arcuate line on each side, resembling half a collar.

The ten outmost quill-feathers of the Wings are wholly black; the tips of the next ten are white, of the hindmost in order more than the foremost. Then follow two half white, viz. on the outside the shaft, the other half being black: The rest of the feathers are cinereous: The number of all twenty seven. The feathers of the second row growing on the middle of the Wing are black, only their utmost tips being white. Above, a broad and long spot or bed of white beginning from the bastard wing reacheth to the twentieth quill-feather. The interior bastard wing is white. The side-feathers under the Wings variegated with transverse waved black lines are very pleasant to behold. The Tail is dusky, or between ash-coloured and black, composed of sixteen feathers, a quarter of a yard, or three inches and an half long, the middle feathers being the longest, the rest on each side gradually shorter to the outmost.

The Bill is of a cinereous or lead colour, [but at the tip of each Mandible is a spot of fordid white] thicker at the Head, growing slenderer by degrees toward the point, narrower, and less than in the *Duck-kind*. The upper Mandible hooked at the end, toothed on the sides: The Nostrils oblong, open, at a good distance from the feathers: The Eyes of a dark colour. The Legs and Feet of a cinereous or lead colour, the Toes being joyned by a dusky membrane. The foremost Toe and the back-

X x

Toe

Toe have lateral appendant membranes, reaching their whole length.

The Wind-pipe at the divarication ends in a certain great, strong, bony vessel, which we are wont to call a Labyrinth; whence proceed the two branches tending to the Lungs.

This Bird hath not two blind guts, after the manner of other Birds, but only one short blunt one, [yet in one bird of this kind we found two.] The Wind-pipe is fastened to the upper angle of the Merry-thought by a transverse ligament, and then ascends upward to the Labyrinth. It feeds upon fishes.

The *Albellus aquaticus* of *Aldrovand*, as it seems to me, differs not from this bird, for both the figure, and all the marks he gives of it, agree; only he makes no mention of the crest, perchance it was a young bird he described.

There is in this kind also much difference between the Sexes, that the Writers of the History of Birds have taken the Male and Female for different sorts. The Female is described by *Gesner* under the title of *Mergus glacialis*, which *Mr. Johnson* Englisheth the *Lough-diver*. It was sent us by *Mr. Dent* from *Cambridge* by the name of a *Smew*.

In the Female the whole Head and the Cheeks are red or fulvous: The Throat white. On the beginning of the Breast above the Claw there is seen as it were a collar of a darker or brown colour: It hath no Crest. All the upper side except the Wings is of a dusky ash-colour or brown. About the middle of each Wing are two transverse white lines. In other particulars it agrees well enough with the Male.

It hath a great Gall; oblong Testicles: The Guts have many revolutions. The Stomach larger than in granivorous birds, less musculous, filled with filices, in the birds we opened.

SECTION V.

Of DOUCKERS or Loons, called in Latine, COLYMBI.

CHAP. I.

Of Douckers in general.

Douckers have narrow, streight, sharp-pointed Bills: Small Heads, and also small Wings: Their Legs situate backwards near the Tail, for quick swimming, and easier diving; broad flat Legs; by which note they are distinguished from all other kinds of birds: Broad Claws like humane nails. Of these Douckers there are two kinds, The first is of such as are cloven-footed, but fin-toed, having lateral membranes all along the sides of their Toes, and that want the Tail; the second is of those that are whole-footed and *caudate, which do nearly approach to those birds we call *Tridactyle*, that want the back-toe. These are not without good reason called *Douckers*, for that they dive much, and continue long under water, as soon as they are up dopping down again.

* Have the Tail.

CHAP.

CHAP. II.

Cloven-footed DOUCKERS that have no Tails.

§. I.

The greater Loon or Arisfoot: *Colymbus major*, *Aldrov.*

It weighed a pound: Was from Bill to Claws twenty three inches long: Between the extremities of the Wings spread twenty three and an half broad. The Bill from the tip to the angles of the mouth was two inches long. The feathers investing the whole body were fine, soft, and thick: The Head and Neck brown: The Back blacker: The sides and lower Belly dusky: The Breast of a silver colour. It wholly wants the Tail. Each Wing hath about thirty quill-feathers: Of which the outmost twelve are black; the tip of the thirteenth is white; and the tops of the following in order more and more to the twentieth, after which the next four are wholly white: The twenty fifth towards the tip is brown, and in the twenty sixth the white ends. The lesser rows of Wing-feathers underneath are white.

Its Bill is black, narrow or compressed sideways; about the angles of the mouth and on the nether Chap yellowish. The Tongue long, and a little cloven: The Eyes of an ash-colour with some mixture of red: Its Claws are broad like the nails of a man, black on one side, on the other of a pale blue or ash-colour: The outmost toe the longest. The Legs broad, flat, ferrate behind with a double row of asperities: The Toes are broad, bordered on each side with appendant membranes, but not web'd together.

It hath no Labyrinth on the Wind-pipe: That we described had a great Gall: A large Stomach, almost round, and therein we found Sea-weeds and fish-bones.

§. II.

The greater crested or copped Doucker of *Aldrovand*, lib. 19. cap. 52.

Both Mandibles of the Bill, where it joyns to the Head, are tintured with a Saffron-colour. The Head is black on the crown, beneath cinereous; which colours meet near the ends of the Eyes (which are yellow.) From the back of the Head hangs down a tuft of black feathers. The upper part of the Neck is also black, the remaining part of a middle colour between * ferrugineous and rose. The Breast * Rusty, and Belly are of a whitish ash-colour. The Back and Wings black, but of these the ridges and extremes are white. It hath no Tail at all: The Rump from cinereous is black. The Legs, Feet, and Claws are of the same make and shape as in the former.

§. III.

Of the Water-Hare, or crested Mexican Doucker of *Hernandez*.

That kind of Duck [so he calls it] which *Aristotle* calls *Colymbus*, but *Gaza* renders *Urinator*, the *Mexicans* are wont to call *Acitli* or the *Water-hare*. This would be altogether the same with that described and delineated by some of the later Writers, were not the Head adorned with a greater and black crest, the Belly of a shining silver colour, and the Neck beneath of a pure white, above of a dark brown. It frequents Lakes, either swimming in the water or abiding near it: For it can neither fly, nor conveniently walk on the Land, its Thighs being so joyned and as it were * united to the body, that they serve only for swimming, not for walking. It feeds upon the filices it catches, and they are its sustenance. It breeds up its young among rushes and reeds; and exceeds not the bigness of our common Ducks. The Male is somewhat longer-bodied, and hath a larger neck and crest. The Bill of the Female is shorter, black, and on both sides near the Eyes covered with fulvous feathers, whereas the Male is with white. This is that Bird which the *Indians* fabulously report to call forth or conjure up winds, when he perceives the Fowlers aim to

X x 2

catch

* *caulit*,
i.e. growing
together.

catch him, which blowing trouble the waters so that their Canoes are overturned and the men drown, if they do not happen to kill him in the shooting of five arrows out of a bow. They fancy that in his heart disfigured is or may be found a Jewel, useful for many things, and highly prized, not to be consecrated to any but God. But these are idle stories and lies, proceeding from the credulity of these people. Its flesh is not pleasant, nor very wholesome, like that of other fenny birds, and therefore not to be used for food by any one of a critical palate.

Between this and the precedent *Doucker* there is so little difference, that I scarce doubt but they are the same.

ϕ. IV.

The grey or ash-coloured Loon of Dr. Brown.

THis Bird differs from the common *Doucker*, as well crested as not crested, in the grey colour of its body, being much rarer with us. The Picture represents the feathers on the crown of the Head standing up in form of a crest or toppin.

ϕ. V.

The greater crested and horned Doucker.

IT is something less than that described in the first place, but hath a thicker and longer Bill, approaching to a ferrugineous colour. It is both crested and horned, having long feathers standing out about the crown of the Head and upper part of the Neck, black above, and red on the sides. The Chin and space about the Eyes is white, bounded with red. The Neck is not so long as in the first kind. The upper or back-side of the Neck is partly blackish, and partly shews something of red. The Breast and Belly are almost of the same colour with the spot we mentioned encompassing the Eyes, viz. white with a mixture of red. On the Back some long downy feathers of a cinereous and a reddish colour are mingled with the black ones. The Wings are longer in proportion than in the first, their ridges and almost all their quill-feathers being whitish, else of a sooty colour. [In the Bird we saw the Wings were of a dusky or brown colour, but the lesser quill-feathers were white, as also those small feathers on the base or ridge of the Wing.] The Legs are not situate so backward as in the first.

ϕ. VI.

*The Diddapper, or Dipper, or Dobchirk, or small Doucker, Loon, or Arisfoot :
Colymbus five Podicipes minor.*

For the shape of its body it is like to a *Teal*, but lesser by almost a third part : Of the weight of six ounces : From the tip of the Bill to the end of the Claws ten inches and an half long : between the tips of the Wings distended sixteen broad. Its Bill from the point to the angles of the mouth is one inch, straight, sharp, almost like a *Thrusper* Bill, thicker at the Head, and lessening by degrees to the point : The upper Chap black, excepting only its very tip and sides, which are of a white or pale yellow, as is also the whole lower Mandible. The Tongue is long, sharp like the Bill, and cloven. The Nostrils are a little remote from the feathers ; The Eyes great, with hazel-coloured *Irides*. The whole body is invested with a thick and soft Plumage or down, especially on the under-side. Its colour on the Back is a dusky or dark brown, on the Belly a white, or rather silver-colour. The Chin white : The Head and Neck darker than the Belly, lighter-coloured than the Back. The Throat and sides of the Neck are a little red : The lower Belly of a fordid dusky colour. The Thighs have a little mixture of red. The Neck is slender, scarce an hand-breadth long. Its Wings are small and concave : Each having about twenty six quill-feathers : The twelve outmost are of a Mouse-dun, or black brown, the interior to the twenty third particoloured, the outer Webs being dusky, the inner partly white, the white part being in the nearer to the body broader, in the more remote feathers narrower. As for the lesser rows of Wing-feathers, those above are black, those beneath white. It hath no Tail at all, but yet hath the rump-glandules, though lesser than ordinary, out of which also springs a brush or tuft of feathers, as

in

in other Birds. The Legs are situate very backwards at the end of the body, made rather for swimming than walking, (so that it cannot walk, but with the body erect almost perpendicularly) compressed or flat, of a fordid green colour, serrate behind with a double row of alperities. The soles of the feet are black. The Feet are divided into three broad Toes, finned on each side with lateral membranes, having thin, broad, blunt Claws like humane nails. Yet are the Toes joyned together by intervening membranes from the divarication to the first joynit. It hath also a small back-toe finned in like manner on each side : Two blind guts of a moderate length : No Labyrinth on the Wind-pipe : A membranaceous stomach : Strong muscular Thighs, by the help whereof it swims very swiftly, diving down to the bottom, and rising again at pleasure. From the make and conformation of its parts it moves with more ease and expedition under water, than either upon the surface of the water, or upon the Land. So soon as it is risen above water it holds up its Head, looks about it, and with wonderful celerity plunges it self under water again. It can hardly raise it self up out of the water, but when it is once gotten upon the Wing it can hold out flying a long time. The stomach of that we dissected was full of grais and weeds. *Bellonius* saith, that it feeds most willingly upon fishes. Being roasted it smells very strong.

Both *Gesner* and *Aldrovand* describe two kinds of small *Douckers*, but they differ so little one from the other that I suppose the diversity is rather in Age or Sex than in Species.

CHAP. III.

Whole-footed Douckers with Tails.

ϕ. I.

*The greatest speckled Diver or Loon : Colymbus maximus caudatus ; Mergus max.
Farrensis five Arcticus, Clus.*

THis is a singular kind of Bird, and as it were of a middle nature between whole-footed birds with four fore-toes and with three. In bigness it exceeds a tame Duck, coming near to a *Goose*. It is long-bodied, hath a round Tail, and a small Head. The upper part of the Neck next to the Head is covered with feathers so thick set, that it seems to be bigger than the very Head it self.

The colour of the upper part, viz. the Neck, Shoulders, covert-feathers of the Wings, and whole Back, is a dark grey or dusky, pointed or speckled with white spots, thinner set on the Neck, and thicker on the Back. These white spots are bigger upon the long scapular feathers and coverts of the Wings, and smaller in the middle of the Back. The lower part of the Neck, the Breast and Belly are white. In a bird I saw that was killed in the Isle of *Jarvey* the Head was black and also the Neck, which had a white (or rather grey) ring, about the middle of an inch or inch and half broad, consisting of abundance of small white specks. We counted in the two outmost * joynits of each Wing thirty quill-feathers, but they are short, all black, or of a dark brown. It hath a very short Tail, of the figure of a Duck, made up of at least twenty feathers. Its Bill is straight, sharp, like that of the *Guillem*, almost three inches long ; the upper Mandible black or livid, covered with feathers to the very Nostrils, reflected a little upwards ; the nether is white. The Nostrils are divided in the middle by a skin hanging down from above. It is whole-footed, and hath very long fore-toes, especially the outmost. The back-toe is very short and little. Its Legs are of a mean length, but flat and broad like the ends of Oars, the exterior surface being brown or black : The interior livid or pale-blue. The Claws broad like the nails of a man. The Legs in this bird are situate almost in the same plain with the Back ; so that it seems not to be able to walk unless erected perpendicularly upon the Tail. It hath no Labyrinth upon the Wind-pipe. The Liver is divided into two Lobes, and hath a bladder to contain Gall : Above the stomach the Gullet is dilated into a kind of Craw, the interior surface whereof is granulated with certain papillary glandules. The Throat is vast, loose, and dilatible. The guts large, especially towards the stomach : The stomach less fleshy and muscular than in granivorous birds.

The

The Bird described was shot on the River Tame in Warwickshire. I have seen four of them, 1. One at Venice in Italy: 2. One in Yorkshshire at Dr. Hewleys, shot near Camwood: 3. A third in the Repository of the Royal Society: 4. A fourth in the house of my honoured friend Mr. Richard Darley in London, taken in the Isle of Jersey. They differ something one from another in colours. For some of them have a ring about their necks, their Back, Neck and Head blacker, and painted with little whitelines: Others want the ring, and have the upper side of their bodies more ash-coloured or grey, varied with white specks, and not lines. Perchance these are the Hens; those the Cocks.

That which *Chusius* described was bigger than a tame Goose, or at least equal to it. For from the Neck, where it joyns to the Breast, to the Rump it was two foot long. The compass of the body round was more than two foot. The Wings were fourteen inches long: The Tail scarce three: The Tongue almost three: The Bill more than four: The Neck near eight, and somewhat more in compass: The Head short, three inches broad: The Legs somewhat longer than three inches: The Feet four inches wide. So far *Chusius*. Of that which Mr. Willughby described at Venice the measures were as followeth: The weight thirty six ounces: The length from Bill to Claws thirty one inches; from Bill to Tail twenty eight. The Bill from the tip to the angles of the mouth was almost three inches long: The Tail two: The second bone of the Leg four and a quarter; the third two and an half; the outmost fore-toe three inches and an half. The Tongue long, sharp, having a transverse bed of asperities not far from the bottom, beneath which it is toothed on each side, as this figure represents.

In the Palate, on each side the fissure, are five rows of prickles or asperities. The blind guts were three inches and an half long. Hence it manifestly appears, that the bird described by *Chusius* was bigger than ours. But perchance *Chusius* his was a Cock, ours a Hen. For those I saw at Dr. Hewleys and Mr. Darleys were nothing at all less than that of *Chusius*, sent him by *Hoierus*. But what *Hoier* writes of them, that they cannot fly at all, is a mistake; for though they never breed in England, yet in hard Winters they come over hither. I scarce believe they swim so far. Whence it is manifest, that they not only fly, but make great flights.

§. II.

* *Gefners greatest Doucker*: *Colymbus maximus Gefneri*.

IN the Lake of Constance I hear there is taken, though but seldom, a certain bird congenerous to the aforesaid, but bigger than a Goose, called *Fluder*, from its uncouth fluttering motion on the surface of the water, for that it can neither fly well, nor walk conveniently, unless it leans both upon Feet and Wings, as do also the other *Douckers*, by reason of the position of the Legs so turned backwards: That it hath a long, sharp Bill: A loud, shrill cry, of a singular kind: That it dives exceeding deep, so that it is sometimes taken twenty yards deep under water, viz. with a Net, or an Iron-hook baited with a fish: that they are commonly sold for two drachms and an half of silver a piece.

Leonard Baltmer, a Fisherman of *Strasbourg*, describes this bird thus. In bigness it equals a Goose: Its length from the point of the Bill to the end of the Toes is one *Strasbourg* yard and an half. Its Bill from the point to the Eyes is five inches long: The Legs from the Claws to the feathers (that is the bare part) ten inches: The space of the Wings extended two yards and a quarter. The Stomach small: It feeds upon fish: The Bill sharp: The Feet broad, the toes web'd together. The upper side of the body is cinereous and black, the under-side white. The Tail three inches long. It dives very far, a Pistol-shot before it rises again. Its flesh is commended for good meat, and is of no unpleasant taste.

This Bird if it be different from the above described, is I confess hitherto to me unknown. Mr. Johnson, in his Papers sent us, writes, that he hath seen a bird of this kind without any spots in its Back or Wings, but yet thinks it not to differ specifically, but accidentally.

§. III.

§. III.

* *Wormius his Northern Doucker, called, Lumme*.

IT is common among the *Norwegians* and *Islanders*, who in their own Country Language call it * *Lumme*. *Carolus Clusius* mentions it in his *Andarum*, pag. 367. It is an elegant bird, of the bigness of a Duck, with a black, sharp Bill, two inches long. Its Head and Neck are covered with grey [cinereous] feathers, ending in a sharp point, as if it had a Monks hood on its Back. Its Back and Wings are black, sprinkled over with square spots of white, which yet are bigger on the Back than the Wings. Under the Neck is a square oblong black spot like to a shield, five inches long, and two broad, compassed on all sides with feathers variegated of black and white as with a * Girdle. The whole Belly and lower parts of the Wings are white. The Legs are stretcht forth beside the Tail [as if they grew out of the Vent] fitted not so much for walking as for swimming, not slender, but flat and broad. Each foot hath three Toes, that are black, and joyned together with black membranes, armed with sharp and crooked Claws. The Thighs are also hid in the Belly. It is of the *Mergi* [Diver] or rather *Colymbi* [Doucker] kind. In diving it can hold its breath a long time, and no bird can plunge under water more nimbly and speedily than it, as they experience who shoot them. For so soon as the powder flashes, it presently ducks under water, before the bullet can come at it. It builds its Nest so near the water, that it can, if need be, speedily cast it self into it: But when it betakes it self again to its Nest, fastning its Bill into the earth, it hangs its whole weight upon it, till it raises up its body, and so by degrees reaches its Nest. It perceives before by a peculiar natural instinct when there are about to fall great showers and shots of rain, and fearing lest the floods should destroy its Nest and Young, it makes a querulous noise and cry: On the contrary, when it prelates fair weather, it expresses its joy by cheerful acclamations, and another more pleasant note. It lays yearly three or four Eggs as big as Goose Eggs, of a * green colour, and spotted. They say, that at set times of the year they depart into hotter Regions, and return not until the Spring be well come on. Whence they think it ominous for any one to hear the cry of this bird first tasting. The *Norwegians* think it * a sin to kill or disturb this Bird, which they account holy. They sometimes catch it in their Nets against their wills, and sometimes shoot it with Guns. The *Islanders* because they eat it, take it either with a snare, or with an angle-line. They fasten two stakes at the entrance of the Nest, upon which they hang, and so accommodate the Snare, that the Bird going to her Nest may thrust her head into it. Or they cross the Pool where she frequents at its narrowest part with a fishing line, so that one on each side holds it, raking therewith the surface of the water, till the bird fearing some danger towards dives down to the bottom; then observing the place where she is rising up again by the circles there made in the water, thither they direct and there hold a snare fastned to the line, that coming up out of the water, she may put her head into it, and so be caught by the Neck.

Its skin is used to defend the Head and Breast from the injury of cold, and preferred before a Swans. This Bird *Besler* hath figured in his *Gazophylacium* by this title. A singular kind of exotic *Water-Swallow*. But it hath nothing almost common with a *Swallow*.

§. IV.

* *The small black and white Diver with a short, sharp-pointed Bill*.

THE Picture of this Bird was communicated by that worthy person Sir *Thomas Brown*. It hath a short Bill, a little bending at the end, [both Mandibles.] The top of the Head, the Back, Wings, and in general the whole upper part is black, excepting a transverse line of white in the Wings. The Chin, Throat, Breast, as far as the middle of the Belly, and sides of the Tail white: The Tail short: The Legs of a fordid green. The Toes web'd together. The Picture doth not shew any hind-toe. This Bird (saith Sir *Thomas*) is not usual with us; I have met with but two of them, brought me by a coaster, who could give it no name.

SECTION VI.

Of SEA-GULLS, called in Latine, LARI.

CHAP. I.

Of Gulls in general.

* This is true especially of the greater Gulls.

* Feeding upon fish.

* Or but a very small one.

GULLS are a whole-footed fowl, with an indifferent long, narrow, sharp-pointed Bill, * a little crooked at the end; oblong Nostrils; long and strong Wings: short Legs, small Feet (for they do not swim much) a light body, but invested with many and thick-set feathers, a carrion carcases, the fat that is sticking to the skin, [as in other birds;] much upon the Wing, very clamorous, hungry, and * piscivorous.

These we divide into two kinds. First, *The greater*, which have Tails composed of feathers of equal length, and an angular prominence or knob on the lower Chap of the Bill underneath, to strengthen it, that they may more strongly hold fishes. 2. *The lesser*, which have a forked Tail, and no * knob on the Bill. Both kinds may be divided into *pie'd* or *particoloured*, and *grey*, or *brown*.

CHAP. II.

The greater Gulls with Tails of equal feathers.

And first such as are pie'd or particoloured of white and cinereous or black;

§. I.

The great black and white Gull: Larus ingens marinus Clusii.

THIS Bird, the biggest by much of all the *Gulls* we have hitherto seen, weighed four pounds and twelve ounces. Its length from the tip of the Bill to the end of the Tail was twenty six inches: Its breadth from tip to tip of the Wings distended sixty seven. Its Bill was yellow, compressed sideways, more than three inches long, something hooked at the end, and like in figure to those of the rest of this kind. The lower Mandible underneath bunched out into a knob, marked on each side with a double spot, the lower red, the upper black. The edges of the Eye-lids round about were of a Saffron colour. The Head great, flat-crowned. Both Head, Neck, Breast, Belly, and Tail white. The middle of the Back and the Wings, excepting the tips of the quill-feathers, were black. Each Wing had about thirty four feathers in the first row, all black, with white tips. Its Tail was six inches long, made up of twelve snow-white feathers: Its Legs and Feet white: Its Claws black. It had a small back-toe; a wide Mouth, a long Tongue, a large Gullet. It preys upon fishes: For out of its stomach dissected we took a *Plaice* entire. It had a great Liver divided into two Lobes, with a Gall adhering: Short and small blind guts: A muculous Stomach, and an oblong Spleen.

In another bird of this kind, (which was I suppose a young one) both the top of the Head and the Neck were particoloured of black and white: The Back and Wings paler than in that described. I suppose that this is the very same bird which *Clusius* describes in the fifth Book of his *Exoticæ*, Chap. 9. under the title of a * *large Sea-gull*, though his description be not so full and exact, as being taken only from a Picture.

This Bird we saw and described at *Chester*, being not rarely found on the Sea-coasts near that City. In the *Ferœ Islands* it is called, *The Swarth-back*.

§. II.

The Herring-Gull. Larus cinereus maximus.

IT is well nigh as big as a tame *Duck*: From tip of Bill to the end of the Toes twenty four or twenty five inches long, to the end of the Tail twenty two or twenty three: Between the terms of the Wings stretched out fifty, and in some fifty five inches broad. The weight was different in several birds, one weighing only twenty six ounces, another thirty, another thirty four. The Bill was yellow, two inches long, narrow, as in the rest of this kind, but pretty deep: The lower Mandible not straight, as in other birds, but the upper edges convex or arcuate; underneath it bunches out into an angle or knob, on the sides of which is a large spot of red. The *Irides* of the Eyes were of a lovely yellow. The edges of the Eye-lids in some yellow, in some, (perchance these were Cocks) of a red-lead colour. The Legs in some yellow, bare of feathers for some space above the knees, in others white, or of a pale flesh-colour: The hind-toe small: The Claws black: The inner edge of the middle Claw sharp. Its Head, Neck, Rump, Tail, and whole under-side white: Its Back, the covert-feathers of its Wings, and the quill-feathers also, except the outmost five, of a dark ash-colour. The two outmost quills were marked with a white spot near the tip, the outmost with a greater, the inner with a lesser, but the very tips of both were black. The tips of the fifth and sixth were dusky. All the rest had white tips. [These colours in several Birds vary something: Yet in general the quill-feathers in all Birds of this sort are particoloured of white, black and cinereous.] The Tail was about five inches long, not forked, made up of twelve feathers of equal length. The Wings when gathered up reached beyond the end of the Tail, and crossed one another. It had a large Craw, a muculous Stomach, in which were fish-bones. They say that it preys upon *Herrings*, whence it took the name *Herring-gull*. It lays Eggs as big as Hens Eggs, sharp at one end, whitish, but spotted with a few black spots.

In the young ones the Back and Head are ash-coloured, with black spots, the Bill black, but white at the tip.

This sort, though it be very common with us, yet hath it not hitherto, that I know of, been described.

§. III.

The common Sea-Mall: Larus cinereus minor.

THAT which I described was a Hen-bird. It weighed a full pound of sixteen ounces: It was from the beginning of the Bill to the end of the Toes fifteen inches and an half long, to the end of the Tail sixteen and an half. The tips of the Wings extended were forty one inches distant from each other. It is something less than the greater *Gull* described by *Aldrovand*; like to the *Herring-Gull*, but much less. Its Bill was like to those of the rest of this kind, narrow, but deep, sharp-pointed, of a whitish colour, but yellow toward the tip. The knob under the lower Chap small, and scarce conspicuous, the upper Chap something hooked or bending at the point. The Tongue cloven: The Nostrils oblong. The Eyes were great, and furnished with membranes for nictation; the *Irides* of a pale hazel-colour: The Ears of a mean size: The Feet of a pale green: The Claws black; that of the middle Toe sharp on the inner side: The back-toe very small, yet armed with a Claw. The membranes connecting the Toes reached as far as the Claws. The Head and upper part of the Neck were clouded with brown spots, the nether part white: The Back ash-coloured, but the feathers covering the Tail white. The Throat and whole under-side of the body was as white as snow: The Tail also purely white. The Shoulders and upper covert-feathers of the Wings ash-coloured, the coverts of the under-side white.

In each Wing were about thirty quill-feathers; the first of which at the tip in the inner Web had a black spot, and on the outer edge a black line, scarce appearing, then followed a white bar about two inches broad, the rest of the feathers to the bottom being black. The tip of the second was white: Under the white a cross bar of black, half an inch broad, beneath that a white bar of an inch breadth, the rest of the

Y y feather

feather to the bottom being black, but the very bottom ash-coloured. The tip also of the third was white; from the tip the upper half of the feather was black, the lower ash-coloured. The three next had also white tips, but the black part was still shorter and shorter, or narrower and narrower in the following than the foregoing feathers, till in the sixth it became scarce a quarter of an inch broad. All the rest of the quills were ash-coloured, with white tips. The Tail was six inches long, not forked, made up of twelve feathers.

* Sweet-bread.

The Liver was large, divided into two Lobes: The Gall yellow: The ** Pancreas* great: The muscles of the Gizzard not so thick and strong as in granivorous birds; within which we found grubs and Beetles. It is a gregarious bird, frequenting Meadows, and the banks of Lakes. That which we described we shot on the bank of the Lake of *Bala* in *Merioneth-shire* in *Wales*, commonly called *Pimble-mear*, through which the River *Dee*, on which *Chester* is built, runs, and they say mixes not its waters with those of the Lake.

It differs from the *Herring-gull*, 1. In that it is less. 2. In the colour of the Bill: From *Bellonius* his ash-coloured Gull, 1. In that it is bigger: 2. That it hath a back-toe armed with a Claw.

§. IV.

* *Baltner's* great ash-coloured Sea-Mew, perchance our *Pewit*.

* Sure the picture is false in this, for nothing of green appears in any Gull we ever yet saw. † A *Strasbourg* yard is not much above half a yard English.

The whole body (at least on the upper side is of a dark ash-colour or bluish, as are also the Tail and lesser quill-feathers, for the greater are black. The crown or top of the Head is black, with an obscure tincture of green (if the ** Picture* deceive us not.) The Bill straight, of a red-lead colour: The Legs and Feet black: The Wings very long, and when gathered up reaching beyond the end of the Tail. The length of the Bird from the tip of the Bill to the end of the Tail was a † *Strasbourg* Yard or more: The breadth from tip to tip of the Wings extended two yards. The Leg so far as it was bare [from the feathers to the end of the Claws] a quarter of a yard long: The Guts seven quarters. I suspect this Bird was no other than the *Cephus* of *Turner* and *Gesner*, that is, our *Pewit*: But then the Legs are painted of a wrong colour; for in the *Pewit* they are red: so is also the Tail.

§. V.

Bellonius his ash-coloured Gull, called in *Cornwal*, Tarrook.

In bigness it exceeds not a common *Pigeon*, neither is it much different in the shape of its body, save that its Head is bigger. It weighs seven ounces: Its length from the point of the Bill to the end of the Tail is almost sixteen inches. Its Wings extended were by measure full thirty six inches. Its Tail almost five inches long, not forciate, consisting of twelve feathers. The under-side of the body was all purely white: As for the upper side, the Head and Neck were white, save that at the Ears on each side was a black spot: The lower part of the Neck was black: The middle of the Back and the Shoulders ash-coloured: The Tail white, only the tips of the feathers for about an inch black: Yet the outmost feather on each side was all white. The four outmost quill-feathers were above half way black: The two next to these had only black tips, being else white. The seventh had only a black spot near the tip: All the rest were white: In brief, the ridge, upper or fore-part of the Wing extended was all along black; which colour near the Back was dilated into a large and broad streak, [or spot.] The Bill was more than an inch long, something arcuate or bending downwards, especially toward the point, which is sharp, of a black colour. The lower Mandible, not far from the tip, bunched out into an angle underneath, as in the rest of this kind. Its Legs and Feet were of all or livid colour: Its Claws black. It hath some rudiment of a hind-toe rather than a perfect toe: for it is only a caruncle knob without any Claw. The Legs also are destitute of feathers for about the length of an inch above the knees.

* Or *Adams* Apple.

The colour of the Mouth within and the Tongue is like that of an ** Assyrian* Apple, as *Bellonius* hath observed. The Tail is five inches long, made up of twelve almost equal feathers: The number of quill-feathers in each Wing twenty eight, or twenty nine.

This

This Bird is easily known and distinguished from all others of this kind, that we have hitherto observed by its wanting the back-toe: It is common on our Sea-coasts.

§. VI.

The *Pewit* or *Black-cap*, called in some places, The *Sea-Crow* and *Mire-Crow*: *Larus cinereus*, *Ornithologi* * *Aldrov.* Also the *Larus cinereus tertius*, *Aldrov.* * *Tom.* pag. 77.
The *Cephus* of *Turner* and *Gesner*.

It is about the bigness of a tame *Pigeon*. That which we described weighed about ten ounces: Its length from tip of Bill to end of Tail was fifteen inches: Its breadth thirty seven. Its Bill was of a sanguine colour, bending something downwards, from the point to the angles of the Mouth two inches long. The Palate was of a red-lead colour: The Eyes hazel-coloured, The edges of the Eye-lids red: Both upper and lower Eye-lids towards the hind-part of the Head were compassed with white feathers. The Head and Throat were black, but dilute. The middle of the Back ash-coloured: The Neck, Tail, Breast, and Belly white: The number of quill-feathers in each Wing twenty nine: The tip and extreme edges of the first were white, the rest of the feathers black; the following feathers to the tenth had black tips, yet with some diversity in several birds; else the whole Wings were ash-coloured. The Tail all snow-white, of about five inches length, not forked, consisting of twelve feathers. The Wings gathered up reach beyond the end of the Tail. The Legs were of a dark sanguine colour: The back-toe small: The Claws little, and black. The Males differ little from the Females in colour or outward appearance. Near *Gravefend* a huge number of these birds frequent the River *Thames*.

We saw and described at *Chester* a Bird of this kind, which there they called the *Sea-Crow*, which differed from the precedent in some accidents of less moment, viz. The crown or top of its Head only was black, not its Throat. Each Wing had twenty eight quill-feathers, the outmost of which had its tip and exterior edge black; the three next in order had their outer Webs white, their tips and interior edges black; the three succeeding had only their tips black. [The third, fourth, and fifth, and in some also the second feathers have a spot of white on their tips.] Of this kind also are those birds which yearly build and breed at *Norbury* in *Staffordshire*, in an Island in the middle of a great Pool, in the Grounds of Mr. *Skrimsheer*, distant at least thirty miles from the Sea. About the beginning of *March* hither they come; about the end of *April* they build. They lay three, four, or five Eggs, of a dirty green colour, spotted with dark brown, two inches long, of an ounce and half weight, blunter at one end. The first Down of the Young is ash-coloured, and spotted with black: The first feathers on the Back after they are fledg'd are black. When the Young are almost come to their full growth, those entrusted by the Lord of the soil drive them from off the Island through the Pool into Nets set on the banks to take them. When they have taken them they feed them with the entrails of beasts, and when they are fat sell them for four pence or five pence apiece. They take yearly about a thousand two hundred young ones: Whence may be computed what profit the Lord makes of them. About the end of *July* they all fly away and leave the Island.

Some say, that the crowns of those Birds are black only in Spring and Summer. A certain friend of mine (saith *Aldrovand*) did sometime write to me from *Comachio*, that the feathers on their Heads grow black in *March*, and that that blackness continues for three months, viz. so long as they are breeding and rearing their Young, and that the other nine months of the year they are white. Which thing if it be true (for to me indeed it seems not probable) no wonder that of one and the same Species of Bird described at several times of the year there should be three or four made. *Aldrovandus* writes, that the description of *Gesner* agrees in other things to his ash-coloured Gull, disagreeing only in the colour of its Bill and Feet. But perhaps (saith he) the colour of the Bill and Feet may vary in birds of the same species, which I will not easily grant, unless they differ in Age or Sex.

§. VII.

* The greater white Gull of *Bellonius*, which we judge not to be specifically different from our *Pewit*.

* I suppose it should have been upon the Wings.

IT is, faith he, leffer than the ash-coloured *Mew*, and a very handsome bird, as fair to see to as a white *Pigeon*, though it seem to be bigger-bodied; and yet being striped of its feathers it hath far less flesh. It is as white as snow, yet * under the Wings it hath somewhat of ash-colour. The Eyes are great, and encompassed with a black circle. Near the region of the Ears on both sides is a black spot. It is well winged, for the Wings exceed the Tail in length. Its Legs and Bill are red, which they are not in the ash-coloured *Gull*. It stands straight upon its Legs, carrying the hinder part of the body more elevated, so that the lower parts seem to be bent like a bow. The Bill is round and sharp-pointed, the ends of the Wings black. This Bird in most things approaches to our *Pewit* last described, it differs in the colour of the crown, and in the black spots about the Ears. *Aldrovandus* makes the lesser white *Larus* of *Bellonius* to be the same with the *Cephus* of *Turner*, that is, our *Pewit*. I rather think it to be the *Sea-Swallow*, because he writes, that it frequents fenny places, and the banks of Rivers.

CHAP. II.

Great brown and grey Gulls.

§. I.

Our *Catarracta*, I suppose the *Cornish Gannet*. Skua *Hoier*, *Chuf*.

THE skin of this fust was sent us by our learned and worthy friend Dr. *Walter Needham*, who found it hung up in a certain Gentlemans Hall. The Bird it self living, or newly kill'd we have not as yet seen at hand. It is of the biggest of this kind, equal to, or bigger than a tame *Duck*. Its Bill is stronger, bigger, and shorter than in other great *Gulls*, black, hooked at the end, and seemed to be covered with a skin from the base of the Nostrils, as in Land-birds of prey. Its Legs and Feet were black: Its Toes armed with strong, crooked Claws, such as we never before observed in any whole-footed Fowl. The colour of the Back is a rusty cinereous or brown, like that of a *Buzzard*: Its Belly and underside paler. The greater quill-feathers of the Wings are black: The Tail also is black, about seven inches long, made up of twelve feathers, of which the two middlemost are somewhat longer than the rest. The bottoms of the feathers as well of the Tail as Wing-quills are white. The length of the Bill from the tip to the angles of the Mouth was no more than two inches and an half. The angular prominence on the lower Chap is small and scarce conspicuous.

Happning to read over the description of *Hoiers Skua* in the *Auſtarium* of *Cluſius* his *Exotics*, pag. 367. I find it exactly to agree with ours, so that I do not at all doubt but this Bird is the *Skua* of *Hoier*. *Cluſius* his description being more full than ours I shall here subjoyn.

The Bird sent me by *Hoier* was (faith he) of the bigness of a great *Gull*, from the bottom of the Neck to the Rump nine inches long. The compass of its body, measuring under its Wings, was sixteen inches. The Neck from the crown of the Head to the Back was seven inches long. The Head not very great, nor the Bill flat, but rather long and narrow, on the part next the Head rugged and rough, towards the point smooth, black, and crooked, almost like those of rapacious birds or *Gulls*, not exceeding the length of two inches. The Wings were almost seventeen inches long, reaching something further than the end of the Tail. The four greater quill-feathers of the Wings were black, not white at the tip, as *Hoier* wrote, unless perchance he had observed that mark in other birds of this kind. From the quill or naked part I found them to be white half way up the feather, as were also the three greater and uppermost Tail-feathers below where they were inserted into the Rump, the upper part

part being black as in the quill-feathers. As for the rest of the feathers investing the body they were of a colour between black and cinereous, but the black predominant, and did nearly resemble the feathers of a bald *Buzzard* or *Kite*. The Legs were placed backward, in the hindmost part of the body, at in most Water-fowl, above the Knee they were very short, below the Knee down to the Foot almost three inches long. The Feet were flat, having three Toes and a short Heel. The outmost Toe (next in length to the middlemost) consisted of four joints; the middle (which was the longest) of three; the inmost (which was the shortest) of two; and the heel or back-toe of one. All ending in sharp, crooked Claws, and joyned together by a black membrane or cartilage to the very Claws.

The characteristic notes of this species are, 1. The thickness and shortness of its Bill. 2. The uniform black colour of its Tail [as far as it appears beyond the incumbent feathers.] 3. The bigness and crookedness of its Talons.

Hoier writes, that it preys not only upon fish, but on all kinds of small birds.

The *Cornish Gannet* (as they told us) doth constantly accompany the shoals of *Pilchards*, still hovering over them in the Air. It pursues and strikes at these fish with that violence that they catch it with a strange artifice. They fasten a *Pilchard* to a board, which they fix a little under water. The *Gannet* espying the *Pilchard*, casts himself down from on high upon it with that vehemence, that he strikes his Bill clear through the board, and dashes out his brains against it, and so comes to be taken. We saw many of these *Gannets* flying, but could not kill one. They seem to be very strong birds, long-winged, and fly swiftly.

§. II.

* *Aldrovandus* his *Catarracta*.

IT comes near to the bird last described. It (faith he) exactly resembles a *Goshawk*. [to which our Bird also answers very well, both in bigness and figure, and in the colour of the upper side of the body,] so that you can scarce distinguish them; for on the upper side, like that, it is variegated with brown, white and yellow mingled; on the under side it is all white, spotted with brown, as the Picture shews. *Aristotle* also writes, that it is less than a *Hawk*, and that it hath a large and broad Throat or Gullet; which last note agrees exactly to my bird, though indeed other *Gulls* also have a wide throat as well as this. But I think *Aristotle* likened it to a *Hawk*, not only for its bigness, but because it was alike spotted, and especially because it preys after the manner of a *Hawk*; and for that purpose is endued with a Bill for the bigness of its body very great and strong, sharp-pointed also, and the upper Chap more than ordinarily hooked. It is an inch thick, and of a deep black. The Neck also is pretty long: The Head lesser than in *Gulls*. The Wings in length are even with the Tail. The Tail is a Palm long, and black: The Hips covered with feathers to the Knees, which in other *Gulls* are not so, but bare a little higher. Its Legs, Feet, and intervening membranes cinereous: The Claws black, crooked, and small.

It differs from our *Catarracta* chiefly, 1. In the colour of the underside of the body: 2. In the colour of the Feet: 3. In the smallness of the Claws. But these things notwithstanding, perchance it may be the same. For *Aldrovandus* (as I gather from his words) took his description from a Picture. But Painters are not wont to be very exact either in expressing of the colours, or delineating the parts.

This description also doth in many things agree to that *Gull* which we shall next describe under the title of the *Cornish Wagel*.

§. III.

The great grey Gull, which we take to be the *Cornish Wagel*, called at *Venice*, *Martinazzo*, at *Amsterdam*, the *Burgomaster* of *Greenland*:
An *Larus albo-cinereus* torque cinereo of *Aldrov*?

IT weighed twenty two ounces; being stretcht out in length from the point of the Bill to the end of the Feet twenty one inches and an half, to the end of the Tail twenty one: its breadth was fifty three inches. Its colour as well in the lower as upper side was grey, such as is seen in the back of a wild *Duck*, or a *Curlew*, being mixed of whitish and brown. [Mr. *Willughby* gives also some mixture of ferrugineous both to

to the brown, and to the ash-colour in the Wings and Back.] The feathers of the Back are black in the middle, and ash-coloured about the edges. The Rump-feathers incumbent on the Tail are for the most part white, only spotted in the middle with brown. The Chin is white. Each Wing hath thirty quill-feathers, all black. The tips of the lesser rows of Wing-feathers in some are black, in some cinereous. The Tail is six inches and an half long, consisting of a dozen feathers, the outmost tips of which are white, then succeeds a cross bar of black, of about two inches broad: The lower part is varied with transverse bars of white and black, the white also spotted with black.

The Bill is almost three inches long, all black, the upper Chap bending a little downward, and as it were hooked: The lower between the angle and the tip underneath bunches out into a knob. The Nostrils oblong: The Eyes grey: The Neck short: The Head great, which in walking or standing still it always draws down to its shoulders, as do also other *Gulls*, so that one would think they had no necks, of a whitish grey colour. Its Legs and Feet are white, or white with a little dusky tints: The hind-toe small: The Claws black, that of the middle toe sharp on the inside.

It hath a huge Liver, divided in two: a Gall annexed to the right Lobe. The Stomach more muscular than in carnivorous birds: The blind guts short and little, yet turgid, and full of Excrement.

The *Cornish* men related to us for a certain truth, that this Bird is wont to persecute and terrify the *Sea-Swallows*, and other small *Gulls* so long, till they mute for fear; and then catches their excrements before they fall into the water, and greedily devours them as a great dainty: This some of them affirmed themselves to have seen.

The *Larus albo-cinereus torque cinereo* of *Aldrovand* is very like to, if not the same with this. On the Breast and Belly it is of a colour from white inclining to cinereous, as also on the upper side of the Wings. It hath a very great Head, encompassed with a kind of ash-coloured wreath, which yet reaches not to the Neck behind, but turns up to the middle of the crown. Along the Neck and Back it declines from grey to blue. The covert-feathers of the Wings are of a colour mixt of white and cinereous. The longer quill-feathers are black, reaching an inch further than the Tail. The Tail is ash-coloured, and black at the end. The Legs, Bill, and Eyes red, yet the tip of the Bill black.

§. IV.

The *Winter-Mew*, called in Cambridge-shire the *Coddy-moddy*. *Larus fuscus* five *Hibernus*.

It weighs well nigh seventeen ounces. In length from the tip of the Bill to the end of the Claws or Tail it was by measure eighteen inches and better. The extremes of the Wings extended were forty five inches distant. The lower part of the Throat about the Craw is a little dusky, else the under-side of the body is all white. The Head is white, spotted with brown: The Neck brown: The middle of the Back cinereous. The long scapular feathers varied with brown spots. The Rump is white. The Tail more than five inches long, made up of twelve feathers. The extreme tips of the Tail-feathers are white; then succeeds a black bar an inch and an half broad, the rest of the Tail being white. The outmost quill-feather of the Wing is of a dark brown or black colour; the second ash-coloured on the inner side: In the following the black part is lessened by degrees, till in the sixth and seventh the tips only remain black. The tips of the eighth and all the following are white. The eleventh feather is wholly cinereous, yet in the middle of the shaft, not far from the tip, darker: In the two next is a brown spot. The succeeding have also their exterior edges black. In the twenty third the blackness disappears again, so that the twenty fourth and twenty fifth are wholly cinereous. Of the last or those next the body the one half is black. The lesser covert-feathers in the upper part of the Wing are of a mixt colour of cinereous and black: Those on the under side of the Wing are white.

The Bill is more than two inches long; from the Nostrils to the end whitish: The upper Mandible longer and crooked, the nether underneath bunches out into an angle or knob, as in other great *Gulls*: The Tongue white, cloven, reaching to the end of the Bill: The Eyes hazel-coloured, and furnished with nictating membranes: The Ears great: The Legs and Feet of a dusky or greenish white: The back-toe little,

armed

armed with a small Claw: the inner fore-toe the least: The Claws black; that of the middle Toe sharp on the inner side.

The Outs were long [twenty eight inches] having many spiral revolutions: The stomach muscular: The Liver divided into two Lobes: The Gall-bladder large. It frequents moist Meadows, Fens, and Rivers, and sometimes plowed Lands too many miles distant from the Sea.

This Bird in many things comes near to the *Larus major* of * *Aldrovand*, but differs from it in the colour of the Eyes, Bill, and Feet, the Bill and Feet in *Aldrovand's* bird being yellow. But the description of this greater *Gull* [*Larus major*] in *Aldrovand* answers exactly to that bird which *Leonard Baltner* hath painted under the title of *Ein Winter-Meb*: wherefore we will here subjoin his description.

§. V.

* The *Larus major* [*Greater Gull*] of *Aldrovand*, called by *Leonard Baltner*; *Ein Winter-Meb*, that is, *A winter Mew*.

From the point of the Bill to the end of the Wings it was almost two spans long: Had a very great and thick Head, particoloured of white and cinereous: Also a large full Breast of the same colour, but more dilute, especially towards the lower belly: A thick yellowish Bill, black at the tip, and very sharp, in the upper Chap whereof are long Nostrils. It gapes very wide: The Pupil of the Eye is black; the Iris yellow, or shining like gold; the yellow is encompassed with a circle of black, the black with a white, and lastly, the white with a grey or ash-colour. The Wings are of a colour mingled of white, * grey, and brown, or chestnut, to the quills, which * Cinereous, on the outside are dusky or blackish, on the inside for the most part cinereous, and † exceed the Tail by an hand-breadth: The longest of them are more than a span. † Reach beyond. The Tail it self is four inches and an half long and better, all cinereous, except a cross bar or border of black, near the end, of more than an inch broad. The Thighs are cinereous, and near the Legs bare of feathers: The Legs of a good length, and slender, as became a light bird, of a pale yellow colour. The Feet, Tocs, and intervening membranes also yellow: The Claws black, short and crooked: The back-toe conspicuous enough, armed also with a claw.

§. VI.

* *Baltner's* great grey *Sea-Mew*, the same perchance with ours described in the third place.

From the point of the Bill to the end of the Wings it was 1 $\frac{1}{2}$ of a *Sirasburgh* Ell long: Between the tips of the Wings extended two Ells broad. It weighed scarce a pound. The length of its foot from the feathers to the Claws was a quarter of a yard: Of its guts seven quarters. Its Bill and Feet were brown [*braunlecht*] The Picture represents them of a dark purple. The colour of the whole body was grey [*grau*] I take this to be no other than the great grey *Gull* described in the third place, but then the colour of the Legs is mistaken.

§. VII.

* *Aldrovand's* *Cephus*.

It's not like a *Gull* in any thing save the Bill and shape of the Legs and Feet, for in other things it rather resembles a *Duck*. From the Bill to the end of the Tail it is a span and half long, and because it hath abundance of feathers it seems to be corpulent, whereas the matter is nothing so. The Bill is of a moderate both length and thickness, of a horn colour, on the sides of the Mandibles red, at the tip (which is hooked) black. The Eyes little, for the most part red, encompassed with a white circle. The Head (which is something less than in *Gulls*) together with the Neck, Breast, Belly, Thighs, and Rump are variegated with white and * brown spots, with a mixture of bay and yellow. The Wings are black, the ends of the feathers being yellowish. The greater feathers of the Tail are also black: The Legs and shanks greenish; the Feet and membrane connecting the Tocs dusky.

This

This Bird is as yet to us unknown, and therefore we have no more to add concerning it. What the Ancients have left us concerning the *Cephus* see in *Aldrovand*. *Turner* thinks that bird which we call the *Pewee* to be the *Cephus* of the Ancients, as we have already told the Reader.

§. VIII.

The brown Tern : *Larus cinereus minor Aldrov.* called by *Baltner*, *Ein Kestler*.

IT is about half so big as *Bellonius* his ash-coloured *Mew*, for it scarce exceeds a span in length. On the Back and Wings it is of an ash-colour, but far deeper than in that inclining to a blue. The quill-feathers of the Wings are on the outside cinereous, but on the inside black; on both sides at * the ends white. The Bill is slender [or small] for the proportion of the body, a little bending and black. The crown of the head towards the hind-part black. The Feet, Legs and membranes uniting the Toes of a Saffron-colour: The Claws black. All the other parts purely white. This is the bird which *Leon. Baltner* describes and paints under the title of *Ein Kestler*, of the bigness of a *Blackbird*, with long Wings, short legs, a small Head, and black for the most part; the Back and quills of the Wings brown, the covert-feathers cinereous, yellow or Saffron-coloured Feet; a black, sharp Bill, moderately bending. It flies up and down continually over the water in pursuit of Gnats and other water-Insects. It feeds also upon fish. This is also the *brown Tern* of Mr. *Johnson*, (if I be not mistaken) whose under-side is all white, the upper brown: The Wings partly brown, partly ash-coloured: The Head black: The Tail not forked. The Birds of this kind are gregarious, flying in companies.

§. IX.

* *Margraves Brasilian Gull*, called *Guaca-guacu*, *Gaviota of the Portuguese*.

IT is of the bigness of a common Hen; hath a straight, long, thick, yellow Bill. Its Head above is covered with black feathers, as are also the hinder moieties of the Wings and Tail. The Throat, whole Neck, Breast, and lower Belly, and fore-part of the Wings are white. It lays its Eggs in the sand, which are like to a Hens for figure, bigness, and colour: They are indeed well tasted, but the flesh of the Bird is nothing worth.

CHAP. III.

The lesser Gulls with forked Tails.

§. I.

The Sea-Swallow : *Hirundo marina*, *Sterna of Turner*, *Speurer of Baltner*.

THe weight of this Bird was near five ounces: Its length from Bill to Tail fixteen inches: its breadth from Wings end to Wings end thirty two inches.

It is a small bird, slender, and long-bodied: Hath a forked Tail, whence it got the name of a *Swallow*: A black crown, the black being terminated by a line drawn from the Nosthils through the Eyes to the Neck, so that above the Eyes the Head is black, under the Eyes white. The Cheeks, Chin, lower Belly, under-side of the Wings are all white: The Breast hath something of cinereous mingled. The Rump is white: The Back and upper side of the Wings are of a dark ash-colour. Each Wing hath twenty nine quills; the outmost ten whereof have their outer Webs running out into sharp points, the rest their inner. The exterior Web of the first or outmost feather is black, the shaft white, and of a notable thickness: The tips of the following till the tenth, and the inside of all white, and moreover half the interior Web of the four or five foremost. The Tail is composed of twelve feathers, the outmost being half a foot long and better, and having their exterior Webs from cinereous inclining to black: The two middlemost scarce three inches long

long and white: The rest having their outer Webs cinereous, their inner white.

Its Bill is long, almost straight, black at the tip, else red. Its mouth is red within: Its Tongue sharp: Its Legs red; the back-toe small: The fore-toes web'd together as far as the very Claws. The claw was large, out of which we took a *Gudgeon*: The Gizzard full of fish-bones: The Guts twenty inches long: The blind guts very short.

These Birds flock together, and build and breed on Islands uninhabited near to the Sea-shores many together in the same quarter. In the Island of *Caldes*, adjacent to the Southern shore of *Wales*, they call them *Spurres*; [a name (as appears by *Baltner*) common to them with the *Germans* about *Strasbourg*,] and that little Isle where they build *Spurre* Island. In other places of *England* they are called *Scrays*, a name, I conceive, framed in imitation of their cry: For they are extraordinarily clamorous. In the Northern parts they call them *Terns*, whence *Turner* calls them in *Latine*, *Sterna*, because they frequent Lakes and great Pools of water, which in the North of *England* are called *Tarns*.

They lay three or four Eggs, either upon the bare ground, or in a Nest made of Reeds. Their Eggs are like the great Gulls Eggs, though much less: The Young are also spotted with black like theirs. They fly up and down over the water, intent upon their prey, and when they espy a fish, they cast themselves down with wonderful swiftness into the Water, and catching it up, fly away with it in a trice. They frequent Rivers far remote from the Sea, as for example, the *Rhene* about *Strasbourg*, where they were taken, described and painted by *Leonard Baltner*, by the title of *Ein Spener*, who tells us also that they build in gravelly and sandy places by the banks of the River; so that if it happen there be a flood in their breeding time, their Eggs are marred, and Nests destroyed.

This Bird for its long Wings, small Feet, forked Tail, continual flying, and finally, for the figure of its whole body, is commonly, and not undeservedly, called, the *Sea-Swallow*.

§. II.

The lesser Sea-Swallow : *Larus Piscator of Gesner* and *Aldrov.* *Ein Fischerlin of Baltner*.

GEsner describes this Bird thus. They say that it is white, with a black crown. It is lesser than the ash-coloured *Gull*, with a black head like the *Sterna*, Bill and Feet of a pale dusky colour: Of swift flight, and when it catches fish, plunging it self into the water, which the ash-coloured *Gull* doth not.

Leonard Baltner describes his *Fischerlin* in this manner. It is a very little kind of *Speurer*, that is, *Sea-Swallow*, even less than a *Blackbird*. It hath long ash-coloured feathers: Bill and Feet of a Saffron-colour: A black crown: The nether side of the body all white, in like manner the Tail. It preys upon small fishes, whence it had its name. Its guts are half a yard long. The Females are less than the Males. Their flesh is good to eat. The Picture represents the Tail forked, and the point of the Bill black: The greater quill-feathers of the Wings likewise black.

It differs from the greater *Sea-Swallow* chiefly in bigness, and the colour of the Bill and Feet.

Mr. *Johnson* thus briefly describes it. It hath the Wings, Tail, and swiftness of a *Swallow*: A red Bill; a black crown; brown Legs; a forked Tail six inches long. In the colour of the Legs he agrees with *Gesner*: but perchance the colour may vary with Age, or differ in the Sexes.

§. III.

The Scare-crow : *Larus niger Gesneri*; * *Aldrov.* *Ein Brandvogel or Megvogel of Baltner.* * *Tom.*, pag. 81.

THis small *Gull* hath black Bill, Head, Neck, Breast, Belly, and Back, (as far as one can judge by the Picture) ash-coloured Wings, reaching beyond the Tail. The Legs have a light dash of red. About *Strasbourg* it is called *Megvogelin*, that is, the *May-fowl*, because (saith *Baltner*) it comes to them in the month of *May*. *Baltner* describes and paints it under the title of *Brandvogel*. It is (saith he) of the bigness of a *Blackbird*; hath long Wings, small and short Legs and Feet, partly cloven, a black Bill, of which colour is also the whole body. They fly in flocks for the most

Z 2 part

part, twenty or thirty together. They catch Gnats, and other water-Insects. Their flesh is good to eat.

This is (I suppose) the same with that which Mr. Johnson saith, they in the North call the *Scare-Crow*; and thus briefly describes. It cannot abide the presence of men: Its Head, Neck, and Belly are black; its Wings ash-coloured; its Tail a little forked: Its feet small and red. The Male hath a white spot under his chin.

§. IV.

Our black cloven-footed Gull.

It is less than the *Sea-Swallow*: In length from the tip of the Bill to the end of the Tail ten inches: in breadth from Wings end to Wings end twenty four. The Bill from the point to the angles of the mouth is an inch and half long, sharp-pointed, and black: The Tongue sharp, and slit at the end: The Head black: The back and upper surface of the Wings of a dark cinereous: The Throat and Breast black: But the feathers of the lower belly under the Tail pure white. The number of quills in each Wing twenty seven: The Tail forked, made up of twelve feathers, the outmost 3½ inches long, the middlemost two and an half. The outmost on each side is all white, all the rest ash-coloured. The Legs are bare up to the middle of the second joint: The Feet small, of a reddish black colour: The Claws black: The hind-toe little; the middle fore-toe the longest, and next to that the outmost. The membrane connecting the inmost and middle toes in the inmost is extended to the Claw, in the middle toe proceeds not beyond the first joint; so the upper bone of the Toe is altogether free and loose. That which joins the outmost and middle Toes, though it begins in both from the very Claws, yet is it depressed in the middle, and as it were hollowed into the form of a Crescent, whose horns are the Toes. The Claw of the middle toe on the inside is thinned into an edge. Its cry is hardly distinguishable from that of the *Sea-Swallow*. It builds among the Reeds, and lays three or four Eggs, like to those of other *Gulls*, of a sordid green, spotted with black, compassed with a broad black girdle about the middle. The blind Guts, as in the rest of this kind, are very short. In the Stomach were *Beetles*, *Maggots*, &c.

This Bird comes very near to the black cloven-footed Gull of *Aldrovand*: But its Tail is forked, of which remarkable note he makes no mention, which sure could not have escaped him, if it had been in the birds he described.

It frequents Rivers, Mears, and Plains of Water far from the Sea.

§. V.

* *Aldrovand's cloven-footed Gull, with longer Wings.*

This Bird on the Wings and Breast is all ash-coloured, hath very large Wings, exceeding the Tail three inches in length, and towards the end black. The Tail is short, and cinereous: The part under the Tail white: The Toes are of a good length, and armed with notable Claws; the Legs short; both black. The Eyes very black, as is the whole Head, and also the Neck, and the Bill beside, which is pretty long, and a little crooked at the end.

§. VI.

* *The other cloven-footed Gull of Aldrovand, with shorter Wings.*

It is almost of the same bigness with the precedent, but hath far shorter Wings, and on the contrary a much longer Tail. Its bigness is equal to that of a *Blackbird*; its colour cinereous; its Head black. Its length from the Head to the Rump is nine inches: The Tail is a full Palm [hand-breadth] long. The ridges of the Wings are white: The Bill black, slender, a little crooked. The feathers under the Tail are white. The Feet are reddish, small, as in *Swallows*. It hath four Toes, with some rudiment of a membrane between them. The Claws are black, and small, however crooked.

These Birds (saith *Aldrovand*) because they do in the shape of their bodies something resemble *Swallows*, are called by us *Rondini marini*.

§. VII.

§. VII.

Mr. Johnson's small cloven-footed Gull.

It is of the bigness of a *Blackbird*, or something less. Its Bill is slender, straight, sharp-pointed, black, round, having no knob in the lower Mandible. The crown of a black or dark red. The sides and under-side of the Neck are red: The Belly and wholenether side white: The Back and Wings brown, spotted with yellowish spots. In the Wings is a transverse white line in the tips of the feathers. The Wings are long; the Tail short. The Toes not web'd together, but bordered on each side with lateral membranes scalloped, and elegantly serrate: Whence when I first saw the skin of it (stuffed at Mr. Johnson's at *Brignal* in *Torkshire*, from the make of its Feet I judged to be of the *Coos-kind*. But afterwards being informed by Mr. Johnson that it is much upon the wing, hath sharp Wings, and cries like a small Gull, differs also in the fashion of the Bill, I changed my opinion, and think that it ought rather to be referred to the *Gulls*, to which I have subjoined it.

SECTION VII.

Of Whole-footed Birds with broad Bills.

These may be divided into the *Goose-kind*, and the *Duck-kind*. The marks of the *Goose-kind*, of which we shall first treat, are a bigger body: Large Wings; a long Neck; a large, and round-ended train: A white ring about the Rump: A rounder Back, not so flat and depressed as in the *Duck-kind*: A Bill thicker at the base, slenderer toward the tip, and not so flat and broad at the end as in *Ducks*: To which might be added shorter Legs.

MEMB. I.

The Goose-kind.

CHAP. I.

Of the Swan: De Cygno.

§. I.

The tame Swan: Cygnus mansuetus.

This Bird is much the biggest of all whole-footed Water-fowl with broad Bills. An old one we made trial of weighed twenty pounds: From the tip of the Bill to the end of the Tail was fifty five inches long, to the end of the Feet fifty seven. The distance between the tips of the Wings extended was seven foot and eight inches.

The whole body is covered with a soft, delicate Plumage, in the old ones purely white, in the young ones grey. The quills of the greater Wing-feathers in this Bird are greater than in the *wild Swan*.

The Bill in the young ones of the first year is of a lead colour, having a round nail as it were at the tip, and a black line on each side from the Nostrils to the Head. From the Eyes to the Bill is a triangular space, bare of feathers, of a black colour, the base whereof respects the Bill, the vertex the Eyes. In old ones the Bill is red, the hook or nail at the end being black. Above at the base of the Bill grows a great Lobe of tuberos flesh of a black colour, bending forward or downward. The space under the Eyes always continues black. The Tongue is indented or toothed: The Feet

of a lead colour, bare a little above the knee. The inmost Toe hath a lateral membrane appendant. The Claws are black.

The Itomach is furnished with thick and strong muscles: The Guts have eight or nine revolutions, and are large. The Wind-pipe in this kind enters not the Breast-bone. Wherefore *Aldrovand* doth not rightly infer that *Aristotle* never dissected this Fowl, because he makes no mention of this ingress, and of the strange figure of the Wind-pipe. For this is proper to the *wild Swan*, not common to both kinds; we having not observed such a conformation of the Wind-pipe in any of those tame *Swans* we have dissected. *Aldrovandus* therefore thinking there was but one kind of *Swan*, viz. that which he dissected, did erroneously attribute what was proper to that one kind, to the *Swan* in general. We have opened two *wild Swans*, and in both have observed the Wind-pipe to enter the cavity of the Breast-bone, and to be there reflected as *Aldrovandus* hath expressed both in words and figures: Of *tame Swans* we have anatomized many, and in all have observed the wind-pipe to descend straight down into the Lungs without any such digression or reflection.

It is a very long-lived fowl, so that it is thought to attain the age of three hundred years: Which (saith *Aldrovandus*) to me seems not likely. For my part, I could easily be induced to believe it: For that I have been assured by credible persons that a *Goose* will live a hundred years or more. But that a *Swan* is much longer-lived than a *Goose*, if it were not manifest in experience, yet are there many convincing arguments to prove, viz. that in the same kind it is bigger: That it hath harder, firmer, and more solid flesh: That it sits longer on its Eggs before it hatches them. For, that I may invert *Plinius* words, Those creatures live longest that are longest born in the Womb. Now incubation answers to gestation. For the Egg is as it were an exposed Womb with the young enclosed, which in viviparous Animals are cherished, and, as I may so say, hatched within the body, in oviparous Animals without the body, by the warmth of the old one sitting upon them.

The *Swan* feeds not upon fish, but either upon herbs growing in the water, and their roots and seeds, or upon Worms, and other Insects, and shell-fish. *Allertus* writes truly, that its flesh is black and hard. As the Bird it self is far bigger than a *Goose*, so its flesh is blacker, harder, and tougher, having grosser fibres, hard of digestion, of a bad and melancholic juice: Yet for its rarity serves as a dish to adorn great mens Tables at Feasts and entertainments, being else in my opinion no desirable dainty. It lays seven or eight Eggs, and sits near two months before its young ones be hatched.

They make use of the skin, the grosser feathers plucked off, and only the Down left, and so dress, as a defensive against cold, especially to cover and cherish the Breast and Stomach.

§. II.

A wild Swan, called also an Elk, and in some places a Hooper.

It weighs less than a *tame Swan*, not exceeding two hundred sixty five ounces, or sixteen pound three quarters. Its length from the tip of the Bill to the end of the Feet was sixty inches, to the end of the Tail fifty six. The figure of the body is the same with the *tame Swans*: The colour white, yet not all over so white as the *tame Swans*: For the middle of the Back, and the smaller covert-feathers of the Wings are cinereous: Sometimes also here and there a brown feather is mixt with the white ones in the Back. Each Wing hath thirty eight quills. The first feather of the bastard-wing is longer than ordinary, as in the *tame Swan*: The quills much less than in that. The Bill towards the tip, and as far as the Nostrils, is black: Thence to the Head covered with a yellow membrane. [Mr. *Willughby* describes the Bill a little differently thus. The upper Mandible is moveable, from the Eyes to the Nostrils bare, and of a fair yellow colour, beyond the Nostrils black. The lower Mandible is black, but the membrane under the Chin yellow.] The Legs are bare of feathers a little above the knees, of a dusky yellow, as are also the Feet. The Wind-pipe after a strange and wonderful manner enters the Breast-bone in a cavity prepared for it, and is therein reflected, and after its egress at the divarication is contracted into a narrow compas by a broad and bony cartilage, then being divided into two branches goes on to the Lungs. These branches before they enter the Lungs are dilated, and as it were swoln out into two cavities.

On

On the sides of the Rump grow two huge glandules, out of which by a light pressure may be squeezed a certain glutinous substance like to ear-wax, wherewith the anoints and composes her feathers. But these glandules are not peculiar to this Bird, though perchance greater and more remarkable in her, but common to all. The Bird we described was a Female. The knot or bunch of Eggs was situate far within the body, between the very Lobes of the Lungs. The Wind-pipe enters the breast-bone, and comes out again below the *Merry-thought*: The Itomach is very fleshy, and furnished with thick muscles. Above the Stomach the Gullet is dilated into a bag, thick-set, and as it were granulated within with many papillary glandules, excerning a kind of *Saliva*, which serves as a *menstruum* to macerate the meat.

The Wind-pipe reflected in form of a Trumpet seems to be so contrived and formed by nature for modulating the voice. Hence what the Ancients have delivered concerning the singing of *Swans* (if it be true, which I much doubt) seems chiefly to agree to this bird, and not to the *tame Swan*.

For my part, those stories of the Ancients concerning the singing of *Swans*, viz. that those Birds at other times, but especially when their death approaches, do with a most sweet and melodious modulation of their voice, sing their own *Nenia* or funeral song, seemed to me always very unlikely and fabulous, and to have been therefore not undeservedly exploded by *Scaliger* and others. Howbeit *Aldrovandus*, weighing on both sides the Arguments and Authorities of learned men, hath (he saith) observed them to be equal; wherefore to cast the scale, and establish the affirmative, he thinks that wonderful structure of the Wind-pipe, by him first observed, is of weight sufficient. But this Argument though it be very specious and plausible, yet doth it not conclude the controversy. For we have observed in the Wind-pipe of the *Crane* the like ingress into the cavity of the Breast-bone, and reflection therein, or a more remarkable one; yet no man, that I know of, ever commended the *Crane* for singing, or musical modulation of its voice. But if you ask me, to what purpose then doth the Wind-pipe enter into the breast-bone, and is in that manner reflected there? I must ingenuously confess, I do not certainly and fully know. Yet may there be other reasons assigned thereof; as that which * *Aldrovand* alledges in the first place, 1. That whereas sometimes for almost half an hours space the *Swan* continues with her heels up, and her head under water, seeking and gathering up her food from the bottom of the Pool or River she swims in, that part of the Wind-pipe enclosed in the breast-bone may supply her with air enough to serve her all that while. So the use of it will be to be a store-house of air, for the advantage of diving and continuing long under water. 2. This kind of structure doth undoubtedly conduce much to the increasing the strength and force of the voice. For that the *wild Swan* hath a very loud and shrill cry, and which may be heard a long way off, the *English* name *Hooper*, imposed upon it (as I suppose) from its hooping and hollowing noise doth import.

Hence it appears how uncertain and fallacious a way of arguing it is from the final cause. For though Nature, Gods ordinary Minister, always acts for some end, yet what that is we are often ignorant, and it doth not rarely fall out to be far different from what we fancy: Nay we may be deceived when we think we are most sure, and imagine it can be no other than what we have presumed.

Wherefore I make more account of the testimonies he alledges; as of *Frederick Pendaſius*, that affirmed he had often heard *Swans* singing sweetly in the Lake of *Mantua*, as he was rowed up and down in a Boat. But as for the testimony of *George Brahm* concerning flocks of *Swans* in the Sea near *London*, meeting, and as it were welcoming the Fleets of Ships returning home with loud and cheerful singing, is without doubt most false: We having never heard of any such thing.

* *Olavi Wormius* of late confirms the opinion of *Aldrovand*, and the reports of the Ancients concerning the singing of *Swans*, producing the Testimonies of some of his familiars and Scholars who professed themselves to have heard their music. There was (saith he) in my Family a very honest young man, one Mr. *Jobu Rostorph* Student in Divinity, a *Norwegian* by Nation. This man did upon his credit, and with the interposition of an Oath solemnly affirm, that himself in the Territory of *Dronten* did once by the Sea-shore early in the Morning hear an unusual and most sweet murmur composed of most pleasant whistlings and sounds: Which, when as he knew not whence it came, or how it was made, for that he saw no man near which might be the author of it, looking round about him, and climbing up the top of a certain Promontory, he espied an infinite number of *Swans* gathered together in a Bay of the Sea near hand, making that harmony; a sweeter than which in all his lives time he

had

* *Ornithol.*
c. 3. p. 139

* *Meſa.*
book 3.
chap. 13.

had never heard. By some Islanders, my Scholars, I have been told, that nothing is more frequent with them than this harmony, in those places where there are *Swans*. This I therefore alledge, that it may appear that the report of those famous ancient Authors concerning the singing of *Swans* is not altogether vain, but attested and proved by modern experiments. Thus far *Wormius*. Let the Readers judge whether his witnesses be sufficient.

This Bird hath not as yet, that I know of, been described by any Author.

CHAP. II.

Of the Goose.

§. I.

Of the tame Goose.

IT is less than a *Swan*, bigger than a *Duck*; weighing sometimes when fatted ten pounds. Its length from the tip of the Bill to the end of the Tail, in that we measured, was thirty five inches and an half, to the end of the Feet thirty seven and an half: The Wings extended were sixty inches and an half over. The length of the Neck from the tip of the Bill to the setting on of the Wings seventeen inches. The Bill it self from the tip to the angles of the Mouth was two inches three quarters long, to the Eyes three and an half. The Tail was six inches and an half long, composed of eighteen feathers, the outmost the shortest, the rest by degrees longer to the middlemost, which are the longest. The colour in these, as in other tame Birds is various, in some brown, in some grey, in some white, in some flecked, or part-coloured of white and brown. The Bill and Legs in young ones are yellow, in old ones for the most part red. The Bill is thick at the head, and slender by degrees to the point. Each Wing hath twenty seven quills or feathers in the first row. When it is angry it hisses like a Serpent. It is very long-lived. A certain friend of ours of undoubted fidelity told us that his Father had once a Goose that was known to be eighty years old, which for ought he knew might have lived the other eighty years, had he not been constrained to kill it for its mischiefousness in beating and destroying the younger Geese.

But of the Goose, a Bird so well known in all Nations, more than enough.

§. II.

The common wild Goose: *Anser ferus*.

IN bigness it equals a tame Goose; is for the shape of its body very like it, and not much different in colour. Its Head, Neck, Back, generally its whole upper side, excepting the feathers incumbent on the Tail is of a dark grey or brown. Yet the uppermost covert-feathers of the Wings are paler. The second, third, and fourth rows of Wing feathers, and likewise the scapular ones have white edges about their tips. The feathers also next the Tail are purely white. The quills of the Wings are twenty seven in number, of a dark brown, almost black. The Tail is six inches long, composed of eighteen black feathers, having their tips and exterior edges white. The colour of the underside of the body is a light grey, by degrees lighter from the Head to the Tail, whereunder it is perfectly white. The Bill is more than two inches long, from the Head almost half way black, then of a Saffron colour, the tip again being black. The upper Mandible all along is toothed or indented with many rows of small teeth; the nether only with one row on each side. The Tongue also hath on either side a row of Teeth in its bordering membrane. Its Legs and Feet are of a Saffron colour: Its Claws black or livid. Under each Eye is a whitish line. That we described weighed seven pound and a quarter.

§. III.

The Bernacle or Clakys: *Bernicla* seu *Bernacla*.

IT is lesser than a tame Goose. Its length from the tip of the Bill to the end of the Claws or Tail (for they are equally extended) is thirty one inches. Its Bill black, much lesser and shorter than a Goose's, from the tip to the angles of the Mouth scarce an inch and half. The Chin, Cheeks, and what of the forehead touches the Bill is white, excepting only a line or bed of black between the Eyes and Bill. The Neck and fore-part of the Breast to the **sternum* both above and beneath is black. ^{* Breast-bone.} The under-side of the body is white, with some mixture of cinereous, yet the lower feathers on the Thighs a little above the Knees are black. The feathers next the Tail are white, those above them black, else the Back is part-coloured of black and cinereous. The Tail black: The quill-feathers of the Wings brown: The lesser rows of covert-feathers of the Wings have white edges, then they are black for a good way, the remaining part of the feather being ash-coloured: which colours so succeeding one another make a very fair shew. The hind-toe is very small.

It frequents the Sea-coasts of *Lancashire* in the Winter-time. This is the Bird which *Belonius* describes under the title of *Cravant* or *Oye Nonnette*, which he thinks to be the *Chenalopez* of the Ancients. See *Belonius* his description in **Aldrovand*, ^{* Ornithol. tom. 3. p. 166.} which agrees exactly to this bird. We have sometimes thought the *Bernacla* and *Brent-Goose* to differ only in Sex, not in *†Species*, but afterwards more diligently considering and comparing both their cases we changed our opinion, for there are remarkable notes by which they may be distinguished, as will easily appear to whosoever will take the pains to compare their descriptions. For in this the Chin and Cheeks are white, in that the whole Head and Neck black, save only a black line on each side the Neck; which in the *Bernacla* are wanting. Besides, the *Bernacla* seemed to us bigger, and much fairer, for those cinereous and black colours alternately disposed in the feathers of the Back and Wings make a very lovely shew. ^{† Kind.}

This also seems to be the same with the *Brenta* or *Bernicla* of *Gesner*, although his description be not very exact. Perchance also the *Baumganse* or tree-geese of *Gesner* may be the same, although he make them different birds: For the description of this he took from a Picture, as it seems, not exactly drawn: Unless his *Baumganse* be the same with *Balters*, i. e. the *Brenta*, next to be described.

What is reported concerning the rise and original of these birds, to wit, that they are bred of rotten wood, for instance, of the Masts, Ribs, and Planks of broken Ships half putrified and corrupted, or of certain Palms of trees falling into the Sea, or lastly, of a kind of Sea-shells, the figures whereof *Lobel*, *Gerard*, and others have set forth, may be seen in *Aldrovand*, *Scnnerius* in his *Hypomnemata*, *Michael Meyerus*, who hath written an entire book concerning the *Tree-fowl*, and many others. But that all these stories are false and fabulous I am confidently persuaded. Neither do there want sufficient arguments to induce the lovers of truth to be of our opinion, and to convince the gainlayers. For in the whole *Genus* of Birds (excepting the *Phoenix* whose reputed original is without doubt fabulous) there is not any one example of equivocal or spontaneous generation. Among other Animals indeed the lesser and more imperfect, as for example many Insects and Frogs, are commonly thought either to be of spontaneous original, or to come of different seeds and principles. But the greater Animals and perfect in their kind, such as is among Birds the Goose, no Philosopher would ever admit to be in this manner produced. Secondly, those shells in which they affirm these Birds to be bred, and to come forth by a strange *metamorphosis*, do most certainly contain an Animal of their own kind, and not transmutable into any other thing: Concerning which the Reader may please to consult that curious Naturalist *Fabius Columna*. These shells we our selves have seen, once at *Venice* growing in great abundance to the Keel of an old Ship; a second time in the *Mediterranean* Sea, growing to the back of a *Tortoise* we took between *Sicily* and *Malta*. *Columna* makes this shell-fish to be a kind of *Balanus marinus*. Thirdly, that these Geese do lay Eggs after the manner of other Birds, sit on them, and hatch their Young; the *Hollanders* in their Northern Voyages affirm themselves to have found by experience.

§. IV.

The Brent-Goose: Bienta.

It is a little bigger than a *Duck*, and longer-bodied. The Head, Neck, and upper part of the Breast are black. But about the middle of the Neck on each side is a small spot or line of white, which together appear like a ring of white. The Back is of the colour of a common *Goose*, that is, a dark grey. Toward the Tail it is darker coloured: But those feathers which are next and immediate to the Tail are white. The lower Belly is white: The Breast of a dark grey: The Tail and greater quills of the Wings black, the lesser of a dark grey. The Bill is small, black, an inch and half long, thicker at the head, slenderer toward the tip: The Eyes hazel-coloured: The Nostrils great: The Feet black, having the back-toe. The length of the Bird from Bill to Tail was twenty inches.

I am of opinion that the *Brent-Goose* differs specifically from the *Bernacle*, however Writers of the History of Birds confound them, and make these words synonymous.

We have seen both alive among his Majesties *Wild-fowl* kept in *St. James's Park*. The Cafe of the *Brent-Goose* I have seen with Mr. *Johnson* at *Brigal* in *Yorkshire*, of the *Bernacle* in *Sir William Fosters* Hall at *Bamburgh* in *Northumberland*: Mr. *Jeffrey* also sent us them both out of *Yorkshire*.

This is the Bird whose figure *Aldrovandus* gives us in the third Tome of his *Ornithologie*, Chap. 37. which *Brancion* sent him painted out of the *Low-Countries*: The whole Head, and Neck besides a certain imperfect white circle in its upper part, the Back and inside of the Thighs were black, the Eyes yellow: The Bill shorter than in that of *Bellonius* [our *Bernacle*] and thicker where it joyns to the Head: The Wings from ash-colour inclined to brown.

Both the description and the figure of the *Ring-Duck* [*Anas torquata*] of *Bellonius* agree in all points to this Bird of ours, so that I doubt not but they are the same. See *Aldrovandus*, *Ornithologie*, Book 19. Chap. 37. It is painted and described by *Leonard Balmur* under the title of *Baumgangs*, that is, *Tree-Goose*; and perchance may be also the *Baumgangs* of *Gesner*.

Mr. *Johnson*, in his Letters lately sent us, writes, as if he thought that this were only the Female of the precedent, induced chiefly by this argument, that the Fowls observed these to company and fly together with them, as themselves told him.

§. V.

The Swan-Goose: Anser cygnoides Hispanicus seu Guineensis.

The Back, as in other *Geese*, is of a dark grey: The Belly white: The Throat and Breast of a reddish brown. A line or list of dark brown runs all along the ridge of the Neck from the Head to the Back. The Bill is black, from the root whereof arises a knob or bunch over-hanging it, which in the Males and old Birds is bigger than in the Hens and Young. A line or fillet of white between the Eyes and Bill adorns the Head. The Tail is of the same colour with the Back and Wings, the tips of the feathers being whitish. The Feet are red, and in some the Bill too. The back-toe is little. It is a stately Bird, walking with the Head and Neck decently erect.

§. VI.

The Gambo-Goose, or Spur-wing'd Goose.

It is for shape of body like to the *Mulcovy Duck*, and of equal bigness: Hath long red Legs: A white Belly; the Back of a dark, shining, purple colour. Its Bill is red: Its Cheeks and Chin white. Its Head hath a red ^{*} Caruncle. But what is most remarkable in it, is a strong Spur proceeding from the first joint of the Wings: The like whereto *Margrave* hath observed in four or five sorts of *Brazilian* Birds: But no *European* Fowl, that I know of, hath them.

* Fleishy protuberance.

§. VII.

§. VII.

The Canada Goose.

Its length from the point of the Bill to the end of the Tail, or of the Feet is forty two inches. The Bill it self from the angles of the mouth is extended two inches, and is black of colour: The Nostrils are large. In shape of body it is like to a tame *Goose*, save that it seems to be a little longer. The Rump is black, but the feathers next above the Tail white: The Back of a dark grey, like the common *Geese*. The ^{*} lower part of the Neck is white, else the Neck black. It hath a kind of white stay ^{*} Bottom. or muller under the Chin, continued on each side below the Eyes to the back of the Head. The Belly is white: The Tail black, as are also the greater quills of the Wings, for the lesser and covert-feathers are of a dark grey, as in the common tame *Geese*. The Eyes are hazel-coloured, the edges of the Eye-lids in some, I know not whether in all, white: The Feet black, having the hind-toe.

The title shews the place whence it comes. We saw and described both this and the precedent among the Kings *Wild-fowl* in *St. James's Park*.

§. VIII.

The Rat-Goose, or Road-Goose: Brenthus fortasse.

Mr. *Johnson*, who shewed us this Bird at *Brigal* in *Yorkshire*, thus describes it. It is less by half than a tame *Goose*, about two foot long; its Bill scarce an inch, black of colour, as are also the Feet. The top of the Head and part of the Neck black: The feathers next the Bill, the Throat and Breast brown: The rest of the under-side white: The upper-side grey, but the ends of the feathers from grey darken into a brownish colour, the edges changing into white, as is usual also in the common tame *Goose*. The quills of the Wings, and the Tail are black, but this hath white feathers on each side. The Rump is also white.

It is a very heedless Fowl, (contrary to the nature of other *Geese*) so that if a pack of them come into *Teer*, it is seldom one escapes away, for though they be often shot at, yet they only fly a little, and suffer the Gunner to come openly upon them.

SECTION VII.

MEMB. II.

Broad-billed Birds of the Duck-kind.

CHAP. I.

Of the Duck in general.

The *Duck-kind* have shorter Necks and larger Feet in proportion to their bodies than *Geese*: Lesser bodies: Howbeit, the biggest in this kind do equal, if not exceed the least in that. They have shorter Legs than *Geese*, and situate more backward, so that they go wading: A broader and flatter Back, and so a more compressed body; and lastly, a broader and flatter Bill. Their Tongue is pectinated or toothed on each side, which is common to them with *Geese*.

These are of two sorts, either wild or tame. The wild again are of two sorts, 1. *Sea-Ducks*, which feed most what in salt-water, dive much in feeding, have a broader Bill, (especially the upper part) and bending upwards, (to work in the stem) a large hind-toe, and thin, (likely for a Rudder) a long train, not sharp-pointed. 2. *Pond-Ducks*, which haunt *Plasies*, have a freight and narrower Bill, a

A a

very

very little hind-toe, a sharp-pointed Train, white Belly, speckled feathers, black, with glittering green in the middle Wing, with a white transverse line on either side. For this distinction of *Sea-Ducks* and *Pond-Ducks* we are beholden to Mr. *Johnson*.

CHAP. II.

Of *Sea-Ducks*.

§. I.

* *Wormius* his *Eider* or *soft-feathered Duck*.

* The soft-feathered Duck.

* Upper part of the Neck.

* A back-toe he means.

Here hath been brought me (saith *Wormius*) from the *Ferroyer* Islands a certain sort of *Duck* they call there *Eider*: What name the *Latines* give it I know not, I have thought fit to intitle it, * *Anas plumis mollissimis*. The Cock differs from the Hen in many things, though the lineaments of the body are much what the same. The Cock in figure or shape exactly resembles a tame *Drake* or *Mallard*; hath a flat, black Bill, coming nearer the figure of a *Goose* than a *Duck*; perforate in the middle with two oblong holes, serving for respiration; of the length of three inches, pectinated on the sides. From the Nostrils through the crown of the Head above the Eyes two very black spots or strokes consisting of soft feathers tend to the hinder part of the head, divided by a narrow white line ending in the upper part of the Neck, * which from green inclines to white. The whole Neck, the lower part of the Head, the Breast, the upper side of the Back and Wings are white: The quills of the Wings black, as also the whole Breast and Rump. The Tail, which is three inches long, is also black: The Legs short and black: The Feet consist of three black Toes, joyned together to the ends by a black membrane: The Toes armed with sharp, crooked Claws. They have a * Spur behind, situate at the beginning of the Leg, furnished also with the like membrane and claw.

The Hen is of the same bigness and figure, but all over of one uniform colour, viz. brown, sprinkled here and there with certain black spots: in its other lineaments and parts agreeing with the Cock.

They build themselves Nests on the Rocks, and lay good store of very fawoury and well-tasted Eggs; for the getting of which the neighbouring people let themselves down by ropes dangerously enough, and with the same labour gather the feathers (*Eider dun* our People call them) which are very soft, and fit to stuff Beds and Quilts. For in a small quantity they dilate themselves much (being very springy) and warm the body above any others. These Birds are wont at set times to moult their feathers, enriching the Fowlers with this desirable merchandize. This same description *Wormius* repeats again in the third book of his *Museum*, pag. 310.

§. II.

The *Cuthbert-Duck*: *Anas S. Cuthberti* seu *Farnensis*.

It is bigger than the tame *Duck*. The Male is particoloured of white and black, the Back white, the Tail and feathers of the Wings black. The Bill is scarce so long as a *Duck*'s: The upper Mandible a little crooked at the end, over-hanging the lower. The Legs and Feet black; having a back-toe. But, what is most remarkable in this kind is, that on both sides the Bill in both Sexes the feathers run down in an acute angle as far as the middle of the Nostril below [under the Nostrils.] The Female is almost of the colour of a *Hen-Grout*. This Fowl builds upon the *Farn* Islands, laying great Eggs. I suspect, nay, am almost confident, that it is the same with *Wormius* his *Eider*. I saw only the Cases of the Cock and Hen stuffed, hanging up in Sir *William Fosters* Hall at *Bamberg* in *Northumberland*. It breeds no where about *England* but on the *Farn* Islands, that we have ever heard of. When its young ones are hatcht it takes them to the Sea, and never looks at Land till next breeding time, nor is seen any where about our Coasts.

§. III.

§. III.

Aldrovandus his black *Duck*.

It is bigger than the common *Duck*. Its Bill is broad and short, yellow on both sides, black in the middle, with a red hook at the tip. The Head and part of the Neck are of a black green, or black, with a tincture of green: The Legs and Feet are red on the out-side, of a citron-colour on the inside: The Web of the Foot and the Claws of a deep black. All the rest of the body is black, saving a cross line of white in the middle of the Wings, and a white spot behind each Eye. The feathers of the whole body are so soft and delicate as nothing more, so that it might be not undeservedly called the *Velvet-Duck*. In the Stomach and Guts, almost down to the straight Gut, I found small indigested fragments of *Cockle* and *Periwinkle*-shells: But in the straight gut they were all concocted, and reduced into a fine powder or sand. It is seldom seen with us, unless driven over by a storm, but on the shores of *Normay* there are great flocks of them, hundreds together.

This is that *Duck* which *William Mascovellius*, a Physician of *Collen*, sent to *Aldrovandus*, giving it this title: *The black Duck with a black, red, and yellow Bill*; whose figure, though not very elegant, we have borrowed. The description of this Bird we owe to Mr. *Johnson*, with whom also we saw its Case stuffed.

§. IV.

The *Sheldrake* or *Burrough-Duck*, called by some, *Bergander*; *Tadorna Bellon*, *Vulpanter* quibusdam.

It is of a mean bigness, between a *Goose* and a *Duck*. Its Bill is short, broad, something turning upwards, broader at the tip, of a red colour all but the Nostrils, and the nail or hook at the end, which are black. At the base of the upper Mandible near the Head is an oblong caraneous bunch or knob. The Head and upper part of the Neck are of a black, or very dark green, shining like silk, which to one that views it at a distance appears black: The rest of the Neck and region of the Cray milk-white. The upper part of the Breast and the Shoulders are of a very fair orange or bright bay-colour. [The fore-part of the body is encompassed with a broad ring or swath of this colour.] Along the middle of the Belly from the Breast to the Vent runs a broad black line. Behind the Vent under the tail the feathers are of the same orange or bay colour, but paler. The rest of the Breast and Belly, as also the under-side of the Wings is white: The middle of the Back white: The long scapular feathers black. All the Wing-feathers, as well quills as coverts, excepting those on the outmost * joynt, are white.

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Each Wing hath about twenty eight quill-feathers, the ten foremost or outmost whereof are black, as are those of the second row incumbent on them, save their bottoms: Above these toward the ridge of the Wing grow two feathers, white below, having their edges round about black. The next twelve quills, as far as they appear above their covert-feathers, are white on the inside the shaft, on the outside tintured with a dark shining green. The three next on the inside the shaft are white, on the outside have a black line next the shaft, the remaining part being tintured with an orange colour. The twenty sixth feather is white, having its outer edge black.

The Tail hath twelve feathers, white, and tipped with black, all but the outmost, which are wholly white.

The Legs and feet are of a pale red or flesh-colour, the skin being so pellucid that the tract of the veins may easily be discerned through it.

It hath as it were a double Labyrinth at the divarication of the Wind-pipe;

Its flesh is not very fawoury or delicate, though we found neither fish nor fish-bones in its stomach.

They are called by some, *Burrow-Ducks*, because they build in *Coney-burroughs*: By others, *Sheldrakes*, because they are particoloured: And by others, it should seem, *Berganders*, which name I find in *Aldrovand*, Book 10. Chap. 19.

We have seen many of them on the Sea-coasts of *Wales* and *Lancashire*, nor are they less frequent about the Eastern shores of *England*.

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§. V.

§. V.

The sharp-tail'd Island Duck of Wormius, called by the Islanders, Havelda.

It is less than the broad-bill'd Duck, called by *Gesner Schellent*: From the crown of the Head to the Rump of a foot and three inches length. Its Head is small, compressed, having white feathers about the Eyes; on the crown black ones inclining to cinereous. The Neck is of the same colour: The Back down to the Rump is black, with a mixture of * *Isabella* colour. The Plumage on its Rump is mingled of black and white. Out of the end of the Rump spring four sharp, black feathers; two of which are nine inches long, the other two of the same colour and figure, being but one third of the former in length. The under side of the Neck and the Belly half-way are black; the other half, and the sides, so far as covered by the Wings, white. The feathers on the upper surface of the Wings are of a purplish black, on the under side cinereous. The Bill is broad like the common Ducks, toothed; the tip, and the part next the Head black, the middle part of an elegant red-lead-colour: It is small and proportioned to the body. The Feet are * brown; the Claws and membranes between the Toes black. The fourth (which stands backward, and resembles a Spur) hath a broad membrane annexed.

§. VI.

The Swallow-tail'd Skeldrake of Mr. Johnson.

The Bill is short and simous, black at the root to the Nostrils, and at the end, the rest red: The Head and Neck all white, which colour reacheth to a good part of the Breast, but further on the Back almost to the *Scapula*, save that there and behind the Ears there is a mixture of dusky Plumage: The Back and Wings black, as is the Breast to the mid-belly; but the Wings are lighter than the Back, especially the middle Pens, which incline to a russet. On either side the Back from the *Scapula* go down divers long, sharp-pointed white feathers, which make an area of about four inches long, and one broad: The rest of the Belly and under the Tail is all white: The Tail hath sixteen pens; the two outmost all white, the four middle all black, and two of those longer than the rest by three inches at least, and very sharp-pointed, the rest black on the out edge, and white on the inner; the Legs whitish blue, with black Webs. She is a great diver, and of the size of a *Wigeon*.

I should have taken this to be the Male, and that described by *Wormius* the Female *Havelda*, in respect of some common notes in Tail and Neb; but that the Female was with this of mine (as may be presumed, a pair only feeding together, several days in *Tees River*, below *Barnards-Castle*) and did not much differ in colour. Thus far *Mr. Johnson*: I am almost persuaded that it is specifically the same with *Wormius* his *Havelda*, differing only in Age or Sex, or perhaps both.

§. VII.

The great red-headed Duck: Seen and described at Rome.

It is full as big or bigger than the tame Duck; weighing two pounds and ten ounces *Roman*. Its Bill is broad, as in the rest of this kind, thicker and broader at the base, slenderer, and narrower toward the point, straight, of a light sanguine colour. Each Mandible is pectinated or toothed with low teeth. The Tongue is thick, broad, as is usual in Ducks, of a flesh colour, cut in on each side with black teeth, like those of a Sickle. The Head seems greater and thicker than in proportion to the body. The crown of the Head is covered with a curious silken Plumage of a pale red colour. These feathers are longer than ordinary, and more erect, so that they appear like a great crest or tuft. The Eyes are red like the Bill, or rather of a red-lead colour. Beneath the Eyes on each side and under the Throat the feathers are of a deep * red. The whole Neck, the Breast, Shoulders and whole Belly are black. The sides under the Wings, and the interior surface of the Wings white, with a very slight tincture or dash of red. Each Wing had twenty six quills of the same colour also above, excepting only the six next the body, which are grey, or ash-coloured.

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Yet the tips of all are black, and in the four or five outmost the exterior Webs also. In the middle quills the extreme tips are again white. All the covert feathers are grey, excepting a white line in the uppermost ridge of the Wing. The middle of the Back is of a grey or ash-colour, with a light tincture of red. Of the same colour are those long feathers growing at the setting on of each Wing, and covering the Back: Above which appear in the Back two broad white spots of the figure of the segment of a circle. The hinder part of the Back to the very Tail is black. The Tail itself very short, composed of sixteen feathers, their upper sides grey, their under white, with a light tincture of red. The Legs and Feet, as in other birds of this kind, red, yet here and there, especially about the joints, clouded with fable. The membranes connecting the Toes, and all the soles of the Feet black. The Bird I described was a Cock, and had a Labyrinth at the divarication of the Wind-pipe. The Wind-pipe itself was greater at the head, slenderer in the middle, and above the Labyrinth again swollen into a greater tube. Its Stomach or Gizzard very large, and provided with very thick and strong muscles, filled with very small stones mingled with grass. Its Liver pale; Gall-bladder little, blind guts long.

This Bird I found in the Market at *Rome*, short, I suppose, upon the Sea-coast. I never hapned to see it elsewhere, neither do I find any description of it, or so much as any mention made of it in any book. Where it lives and breeds I know not.

§. VIII.

The Scamp-Duck: Perchance the Fuligula of Gesner.

It is somewhat less than the common Duck, about two foot long. Its Bill is broad, and blue; the upper Mandible much broader than the nether. The Head and part of the Neck are of a black green: The Breast and under side of the Neck black, the lower part of the Neck hath something of white mingled. The Belly is white, with a sprinkling of yellow in its lower part, about the Vent of black. The upper part of the Back is of a foaty or fable colour; the middle white, waved with transverse lines of brown; the lower, together with the Tail, brown. The Tail is scarce two inches long: The Wings brown, adorned on the upper side with white spots, having also a cross line of white. The Legs and Feet, together with the Web and Claws, are of a dusky blue colour.

This Bird is called the *Scamp-duck*, because she feeds upon *Scamp*, i.e. broken shell-fish: She varies infinitely in colour, especially in Head and Neck, so that among a pack of forty or fifty you shall not find two exactly alike: A thing not usual in this kind.

This Bird we have not as yet seen: We owe this description and history of it to *Mr. Johnson*.

§. IX.

*The tufted Duck: Anas Fuligula prima Gesneri, * Aldrov. Mergus citratus minor Gesn. * Ornithol. Quercuedula cristata five Colymbis Bellonii, Aldrovand. p. 210. 63 p. 217. as we think. Capo negro at Venice.*

The Bill from the tip to the corners of the Mouth is about two inches long, broad, of a pale blue colour all but the tip, which is black. The feathers on the forehead descend down the middle of the Bill in a peak or angle. The Nostrils are great, at a pretty distance from the Plumage. The Irides of the Eyes of a yellow or gold colour: The Ears small, as perchance in all Water-fowl. The Head, especially the crown, of a dark purple inclining to black, or rather black with some mixture of purple; whence at *Venice*, and elsewhere in *Italy*, it is called, *Capo negro*. It hath a crest or cop hanging down backwards from the Head, of an inch and half long. The colour of the Neck, Shoulders, Back, in fine the whole upper part is a dark brown, almost black.

The Wings are short, all the covert feathers black: The four outmost quills of the same colour with the body; the succeeding little by little whiter, the subsequent than the antecedent. The second decade or middle quills are purely white, all but their tips, which are black. The next six are wholly black. The Tail is very short, composed of fourteen black feathers.

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The nether side of the Neck and forepart of the Breast are black, the rest of the Breast and Belly, as far as the Vent, of a white or silver-colour, the lower the darker. Behind the Vent it is black. The lateral feathers covered by the Wings when closed, those on the Thighs, and the under-coverts of the Wings are white. The interior bastard-wing consists of six white feathers.

The Legs are short and situate backwards: The Feet of a livid or dark blue colour, the Web black: The Toes long.

The body is short, thick, broad, and something compressed or flat, weighing about two pounds.

In the angle of the lower Mandible some have a white spot, which in others is wanting.

The Wind-pipe hath its labyrinth. The Liver is divided into two Lobes, having a Gall annexed. The Gizzard is composed of thick muscles: Therein we found nothing but small stones and Sea-wrack.

We saw a Bird very like this, perchance the same, in his Majesties Pools in S. James's Park.

Its Bill and Legs were of a lead-colour: Its Head black. Its Wings little, but above the Wings the sides white. A long crest hangs down backward from behind the Head. [To me, beholding the Bird at a distance, the whole Wings seemed white, but perchance that colour was proper to the covert-feathers, not common to the quills.]

§. X.

The black Diver or Scoter: Anas niger minor.

It is almost as big as the common Duck, but rounder-bodied. The whole body all over is of a black or fable-colour. From the Shoulders in some birds spring blacker feathers. In the Chin and middle of the Breast some ash-coloured or whitish feathers are mingled with the black. The Wings are of the same colour with the body, without any diversity of colours at all. The Bill such as in the Duck-kind, yellow about the Nostrils, else black; pectinated about the sides, yellow within, without any bunch in the upper Mandible. Its Feet are black. This description is of a Hen.

In the year 1671. I found the Male of this kind at Chester, killed on the Sea-coasts thereabouts, and bought in the Market by my Lord Bishop Wilkins his Steward, and described it in these words.

It is something less than a tame Duck, short-bodied for its bigness, and broad; all over black both upper and under-side: Only the Head had a dark tincture of purple, and the under-side of the first, second, and third rows of Wing-feathers inclined to cinereous. The wings were short; the quills in each twenty five. The Tail more than an hand-breadth long, consisting of sixteen feathers, the outmost of which were the shortest, the rest in order longer to the middlemost, which were the longest, so that the Tail runs out into an acute angle, more acute than I remember to have observed in other Sea-ducks; and each single feather is very sharp-pointed.

The Bill in this Bird is especially remarkable, being broad, blunt, as in the rest of this kind, of about two inches length, having no Appendix or nail at the tip, contrary to the manner of other Ducks. The upper Mandible above the Nostrils, next the forehead, bunches out into a notable protuberance, being so divided in the middle as to resemble Buttocks, distinguished by a yellow intercurrent line. Now the colour of this upper Mandible is black about the sides, yellow in the middle, the yellow part being so broad as to contain the Nostrils, and about an inch long. The Tongue is very great. The Eye-lids yellow. The Irides of the Eyes dark. The Legs and Feet dusky: The Toes very long, and web'd together, so that its oars are broad and large. The shorter Toe hath a membranous border extant along its outside. This had no labyrinth on its Wind-pipe. The blind-guts for a bird of this kind were very short: The Gall great. It weighed two pounds and nine ounces: Its length from Bill to Tail was twenty two inches: Its breadth from Wings end to Wings end thirty four and an half.

This Bird hath not as yet been described by any Author extant in Print that we know of. It abides constantly at Sea, gets its living by diving, and is taken in Nets placed under water. In the wash in *Lincolnshire* it is found plentifully. Its Call

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that was sent us first by Mr. Fr. Jeffes out of *Yorkshire*: Next we got it at *Chester*, as we have laid: Then Sir Thomas Brown sent us a Picture of it from *Norwich*; and lastly, Mr. Johnson sent a description of it in his method of Birds, in which description are some particulars not observed by us, viz. that the Male hath on the upper side some tincture of shining green, and that in the Hen the Neck and Head on both sides, as far as the Eyes, is white.

§. XI.

The Plover, or Pochard, or great read-headed Wigeon: Anas fera fusca of Gesner, Aldrov. t. 3. p. 221. Penelope veterum & Rothsals of Gesner, Aldrov. p. 218. Cane a la tette rouge of Bellonius.

That we described weighed thirty two ounces: From tip of Bill to end of Tail was nineteen inches long, to the Claws points twenty one. It is bigger than the common Wigeon, and for its bigness shorter and thicker. The lesser covert-feathers of the Wings, and those on the middle of the back are most elegantly variegated with dark brown and cinereous waved lines [or ash-coloured, with very narrow, waved, cross, dusky lines.] The Rump and feathers under the Tail are black, so that the Tail is compassed with a ring of black. The lower part of the Neck is likewise black, so that the forepart of the body seems all to be encircled with a ring or swathe of black. The Head and almost the whole Neck are of a deep fulvous or red colour: the middle part of the Breast white, the sides and lower part, and Belly all of the same colour with the Back, and varied with the like transverse undulated lines, but both colours paler: Toward the Vent it is by degrees darker coloured. The Tail is very short, not exceeding two inches, made up of twelve feathers, of a dark grey, the outmost the shortest, the rest gradually longer to the middlemost; yet the excess is not considerable, so that notwithstanding it is not to be reckoned among those that have sharp Tails. The quills of the Wings are about twenty five, all of one colour, viz. a dark cinereous, though if they be carefully heeded, there will appear some diversity, for the tips of the exterior and greater feathers are marked with black, of the middle ones with white. The interior bastard-wing and lesser covert-feathers of the under-side of the Wings are white.

The Bill is bigger and broader than in the Wigeon. The feathers divide the middle of the upper Mandible coming down from the forehead in form of a peak or acute angle. The upper Mandible is of a lead-colour, but its tip black: The nether is wholly black. The Irides of the Eyes are of a very beautiful colour, from yellow inclining to a sparkling red: The Feet lead-coloured: The membranes connecting the Toes black: The innermost toe the least, having a membranous border annexed to its outside. The back toe hath likewise an appendant membrane or fin.

The characteristic note of this Bird, is one uniform colour of its Wings, without any feathers of different colour in the middle of the Wing, as is usual in most Birds of this kind.

In another Bird of this kind, (which we take to be the Female of this) the Bill was black with an ash-coloured spot of the form of a crescent a little above the tip. The back feathers and coverts of the Wings had no such transverse waved lines as those of the Male. In other points it agreed most what with the Male.

§. XII.

The lesser red-headed Duck: Perchance the Anas Filigula altera of Gesner, Aldrov. p. 227. The Glaucium or Morillon of Bellonius: Capo rosso at Venice.

It is bigger than a Teal, and something less than a Wigeon. Its Bill two inches and an half long, of a moderate breadth, of a dark blue colour, paler about the edges, and toward the tip. The very tip or nail is round and black. The Nostrils small, long, situate almost in the middle of the Bill. The Irides of the Eyes of a cream or Ivory colour. The Head is pretty great, all over red: But in the very angle of the lower Mandible is a small white spot. The Neck, as in others of this kind, is short, encompassed in the middle with a ring of brown. The whole Back and covert-feathers of the Wings are of a dark brown or dusky colour. All the quills of the Wings (which are in each about twenty six) except the three or four outmost, and the three or four

inmost

inmost are white with brown tips, so that when the Wing is spread they represent a broad transverse line of white. The Tail is very short, the middle feathers which are the longest being about two inches and a quarter in length, the outmost shorter; of a brown or dusky colour, the number of feathers fourteen. The Breast below the riding down to the Merry-thought is red, which colour above also reaches to the middle of the Shoulders. The rest of the Breast and the upper Belly is white, the lower to the Vent dusky or dark grey. The feathers under the Tail are white, those long ones on the thighs red. The Legs and Feet black, especially the joints and membranes connecting the Toes. The back-toe hath a broad appendant membrane or fin, as in the rest of this kind. The Wind-pipe hath a labyrinth at the divarication, and besides above swells out into a puff-like cavity. The stomach is muscular. These Birds vary something in the colour, especially of their Wings.

A Bird of this kind weighed twenty one ounces; was in length from the tip of the Bill to the end of the toes seventeen inches and an half; in breadth between the extremes of the Wings expanded twenty six and three quarters: The length of the guts forty two inches.

The description of the *Anas Fuligula altera* of Gesner in * *Aldrovand* agrees well to this Bird: So doth also the description and figure of the *Morillon* or *Glaucinus* of *Belonius*, especially in the colour of the Eyes. But because there is some difference, we will subjoin his description that the Reader himself may judge.

The Glaucium or Morillon of Belonius.

There is (saith he) also another Water-fowl, called in our common speech *Morillon*, very like to a *Duck*, and of the same bigness, having its Bill cut in the edge like a Saw; its Legs and Feet red on the inside, dusky on the out: Its whole Head to the middle of the Neck of a deep ferrugineous. Below the ferrugineous a whitish circle encompasseth the Neck. The Breast is of an ash-colour, the Belly white: The Back and Wings black. But in these, if they be stretcht out appear seven white feathers, which render the Wings particoloured as in a *Pie*. The rest of the Wings, as also the Tail (resembling that of a * *Cormorant*) are black. Getting its food for the most part out of the water, it lives upon little vermine and creeping things, which it finds in the bottom of the water: Diving also, and continuing long under water, it catches small fishes, and water *Milipedes* or Lice, which the French call *les Escrouelles*. It feeds also upon the seeds of herbs which grow on River-banks, and upon young *Cray-fish* and Snails. It hath a Tongue so fleshy, that near the root it seems double: A broad Breast, like the rest of the Duck-kind: Short Legs, stretcht out backwards, like the *Divers* [*Mergi*.] In the inward parts this only is peculiar to it, that no Gall appears in it. The Liver is divided into two Lobes, one whereof is incumbent on the stomach, the other on the guts.

This description in most notes, the magnitude excepted, agrees to our Bird. For though *Belonius* in his description affirms, that the ring about the Neck is white, yet in his figure he represents it black.

§. XIII.

*The Golden-eye: Anas platyrhynchos mas, Aldrov. p. 225. Clangula Gesneri, Aldrov. p. 224. * Quattro occhi Italian: Weisser Driuvogel of the Germans about Strasburgh.*

It is thick and short-bodied; and hath a great head. Its Neck, as in the rest of this kind, is short: Its Bill broad indeed, but short; more elevated, and not so flat or depressed as in the rest of this kind, thicker at the head, lesser and narrower toward the tip; all black, from the tip to the angles of the mouth an inch and three quarters long. The Head is of a very dark green, or of a changeable colour of black, purple, and green, as it is variously expofed to the light, shining like silk. At the corner of the Mouth on each side is a round white spot, as big as a three pence, whence it got its name *Quattro occhi* in Italian. The *Irides* of the Eyes are of a lovely yellow or gold-colour. The whole Neck both above and underneath, the Shoulders, Breast, and whole Belly are white: The space between the Shoulders and all the lower part of the Back are black. The Wings particoloured of black and white, viz. the middle feathers, both quils and coverts, are white; the outer and inner black. To speak more exactly. The fourteen outmost Quils are black; the seven next white; the four inmost again black.

* Ornithol.
p. 227.

* *Cornus aquaticus.*

* That is, four eyes.

black. The covert-feathers above the seven white ones are white, all but those near the ridge of the Wing. But the bottoms of those of the second row are black half way up. The long scapular feathers are also mixt or particoloured of black and white. The Tail is three inches and an half long, made up of sixteen feathers, from the outmost by degrees longer, yet is not the Tail sharp, but rather round-pointed, all of one uniform black colour.

The Legs are very short, of a Saffron or yellowish red colour, as are also the Feet. The Toes are long, dusky about the joints; the outmost the longest; the inmost hath a broad appendant membrane. The membranes connecting the Toes, and the Claws are black. The back-toe is small, having also a broad appendant membrane or fin. The Wind-pipe hath a labyrinth at the divarication, and besides, above swells out into a Belly or puff-like cavity.

Its weight was about two pounds, its length from Bill to Claws nineteen inches: its breadth thirty one.

These Birds are very common at *Venice* in *Italy*, and not rare upon our Seacoasts.

Our smaller reddish-headed Duck, which it seems is no other than the Female of the precedent: *Perchance* the *Anas Schollent* of *Gesner*, or the *Anas fera fulca* alia of *Aldrovand*, p. 222.

It is about the bigness of the *Anas fuligula prima* of *Gesner*: Weighs twenty four ounces; is from Bill to Claws seventeen inches long. It hath a great Head, of a fardid red colour: A short Neck of a grey or hoary: A white Breast and Belly: Its Back, Tail, most of the covert-feathers and ten outmost quills of the Wings are of a dark brown or black. The quill-feathers from the tenth to about the twentieth are white. In the lesser rows of covert-feathers is also a great spot of white. [The second row of Wing-feathers, as many as are incumbent on the white quils, are white, but tipped with black.] In the lesser rows of wing-feathers there is also a large white or ash-coloured spot: So that in some the whole Wing almost seems to be white. The Wings are small for the bigness of the Bird, their feathers being short. The Tail is made up of sixteen feathers, and is for this kind long. The Bill is shorter and narrower than that of the *rusted Duck*, thick at the head, sharper toward the tip, the extreme hook or nail being black, and encompassed by a broad yellow space, very elegant to behold; the rest of the Bill black. The Eyes were of a lovely yellow or gold-colour. The Feet large, situate backwards, of a yellowish red colour, the Web of the Feet dusky; the foal black. I observed no labyrinth on the Wind-pipe, It hath a small Gall-bladder of an oval figure. In the *Craw* we found a *Crab-fish*.

Since the finishing of the *Latine History* we have been informed that this Bird is no distinct kind, but only the Female *Golden-eye*. And truly, the shape of the body, the make of the Bill, the length, number of feathers, figure and colour of the Tail, the fashion and colour of the Feet, and other accidents induce us to think so, neither is there more difference in weight than is usual between different Sexes. Besides that, this was a Female the want of the labyrinth proves; but in the next Article I shall shew some reason to doubt whether of the *Golden-eye* or not. Mr. *Willughby* also was suspicious that it might be the Hen *Golden-eye*.

§. XIV.

The greater reddish-headed Duck, perchance the same with the last described, or the Male thereof: An Anas Schellent dicta Gesnero? Aldrov. p. 223.

It weighed twenty four ounces, being in length from the tip of the Bill to the end of the Tail eighteen inches and an half, to the end of the Toes nineteen; in breadth the Wings being spread out, thirty. The Bill two inches long, yellow, not only about the tip, like the precedents, but also of a fardid or dark yellow all along the middle beyond the Nostrils. The *Irides* of the Eyes are of a bright lovely yellow: The Head of a fardid red: the Neck grey. For that cheefest or red colour of the Head extends not to the middle of the Throat. The Back and whole upper side are of a dark brown or black. The Throat, Breast, Belly to the very Tail white; but at the Vent is a cross bar of brown.

Each Wing hath about twenty six quills; of which the outmolt ten are black, the tip of the eleventh white; in the succeeding the white increases, till after three or four it reaches to the bottom. The twentieth or twenty first hath its exterior half white, its interior black. [There is some variety in several Birds in the colours of these feathers.] The feathers immediately above the white feathers are also white: Besides, in the lesser covert-feathers is a great spot of white in some birds, of grey in others. The Legs and Feet are of an obscure, fordid yellow, but about the joints black. The web of the Foot is also black. The Legs are situate backwards, as in the rest of this kind, feathered down almost to the knees, the Shanks short, but the Feet large: The inmost Toe hath a membrane bordering on the outside of it. The hind-toe hath also its membrane annexed. The Tail is three inches and an half long, made up of sixteen feathers, of the same colour with the Back.

I should take this Bird to be the very same with the precedent, not only in *Species*, but in *Sex*, notwithstanding its difference in bigness, were it not that it had a labyrinth on the Wind-pipe, which I suppose is proper only to the Males. So that either this is the Male of the precedent, and both different in species from the *Golden-eye*: Or, which I rather incline to believe, this must be a young *Cock-Golden-eye*, that had not moulted its chicken-feathers; and the precedent an old *Hen-Golden-eye*: And so these two supposed *Species* are reduced to the *Golden-eye*; they being all three the same.

ϕ. XV.

The Shoveler. Anas platyrhynchos altera five clypeata Germanis dicta: Tafchenmul

* Tom. 3.
pag. 224.

* *Aldrov.* *Anas latirostra* major, *Gefner.* *Aldrov.* p. 227. Breitchnabel Germanis.

IT is something less than the common tame *Duck*, weighs twenty two ounces, being in length from the tip of the Bill to the end of the Tail twenty one inches. Its Bill is three inches long, coal-black, much broader toward the tip than at the base, excavated like a Buckler, of a round Circumference. At the end it hath a small crooked hook or nail. Each Mandible is pectinated or toothed like a comb, with rays or thin plates inserted mutually one into another when the mouth is shut. The Tongue is fleshy, thick, broad, especially toward the tip; but the tip it self is thinner and femicircular. The Eyes are of a deep yellow: The Legs and Feet of a Vermilion colour: The Claws black: The hind-toe little. The membrane connecting the Toes ferrate about the edges. The Feet are less than in others of this kind.

The Head and Neck almost half-way are of a fair blue. [In the Bird which I described at *Rome*, and in another which Mr. *Willughby* saw at *Crowland* it was very * dark, lightly tintured with a deep shining green.] The under-side of the Neck and region of the Craw are white; the upper-side and Shoulders particoloured of white and brown. The rest of the Breast and the whole Belly to the Vent are red. Behind the Vent the feathers under the Tail are black. The Back is brown, with a light dash of a shining green, blue or purple colour. The feathers covering the outside of the Thighs are adorned with transverse dusky lines, as in many others.

The number of quills in each Wing is about twenty four: The ten or twelve outmost whereof are wholly brown: The next nine have their outer edges of a deep shining green: The four next the body are varied in the middle and about their edges with white lines. The feathers of the second row incumbent on the green quill-feathers have white tips, which together taken make a cross line of white in the Wing. The lesser covert-feathers of the Wing, excepting those on the outmost bone, are of a pleasant pale blue, inclining to ash-colour. The Tail is about three inches and an half long: consists of fourteen feathers, particoloured of white and black, the outmost feathers being wholly white, the middlemost, except the extreme white edges, wholly black, the rest black in their middle parts, white about the borders or outside.

At the divarication of the Wind-pipe it hath a small labyrinth: A large Gall: Oblong Testicles: A small muculous Stomach or Gizzard: Guts many times reflected, very long. The Female in respect of colours both in the Head and Neck, and also in the whole body, upper-side and under-side, excepting only the Wings, is very like to a wild *Duck*. The Wings are of the same colours with the Wings of the Male, but more dull, and not so bright and pleasant. The Fowlers affirm, that these Birds change their colours in Winter. *Gefner* and *Aldrovand* set forth this kind twice or three

thrice under several titles. It is sufficiently characterized and distinguished from all others of this kind by the breadth and bigness of its Bill.

ϕ. XVI.

* *The broad-bill'd red-footed Duck of Aldrovand, which Itake to be the Hen-Shoveler.*

* *Anas platyrhynchos erythropus.*

THE Legs and Feet wholly are of a deep red. The Bill is almost three inches long, very broad, and * turning up after the fashion of a Buckler, of a dark * *Recurvum* chestnut colour; yet the lower Mandible, which almost enters the upper [being received into it] is in some places of a spadicous colour, and hath a remarkable stroke running through its middle long-ways. The Bill hath such teeth on both sides as *Gefner* attributes to his * *Muggent*. The colour of the feathers, almost the whole * *Anas* mealy body over, comes near to that of pulveratitious birds [*Partridge* and *Quail*, &c.] ^{ca. 16.} called *μαρμαίρος*, that is, testaceous or pot-heard colour. [Their pots were paler than ours now adays.] The whole Head and middle of the Neck were of a * *Woad* * *Melancholic* ^{ca. 101.} *fel* colour, sprinkled with greater and lesser spots, partly white, and those very small and scarce conspicuous, partly brown, and those most in the crown and hinder part of the Head. The Neck underneath is of a pale whitish cinerous colour, with semilunar brown spots. The same spots, but greater, are dispersed over the fore-part of the Back, the Breast, the Belly, the Rump, and the Tail, all which parts are of the same colour with the Head, or yellowish. The middle and lower part of the Back are covered with feathers of a dark spadicous colour, only white about the outmost edges. The ridges of the Wings are of a Woad colour. A line of the same colour crosses the middle of the Wings, above which is likewise seen a transverse white line. The remaining parts of the Wings are of a dark spadicous colour.

ϕ. XVII.

* *A broad-bill'd Duck with yellow Feet, of Aldrovand.*

IT differs little from the precedent in magnitude, unless perchance it be somewhat bigger. Its Bill is partly brown, partly yellowish. Over the whole body, which is of a yellowish ash-colour, are brown spots disseminated, thick-set, and little in the Head, greater, and thinner, or more scattering in the Neck, Breast, Belly, Rump, and Tail, but much greater yet and thicker in the whole Back. The Wings to the middle part are brown. A white line crosses them in the middle; after which is seen a * square blue spot, three angles whereof end in a black line: To this succeeds a * *Ornithogallus* ^{ca. 101.} white line. Its Legs are yellow; its Toes also yellow, but connected by dusky membranes.

This seems to be some Hen-bird of the Duck-kind, not hitherto observed by us.

CHAP. III.

Pond-Ducks, frequenting chiefly fresh waters.

ϕ. I.

The common wild Duck and Mallard: Boscas major; Anas torquata minor * *Aldrov.* * *Tom. 3.* ^{pag. 212.}

IT weighs from thirty six to forty ounces; being about twenty three inches long, measuring from the tip of the Bill to the end of the Tail. The Wings stretch out reach thirty five inches. The Bill is of a greenish yellow, from the angles of the mouth produced two inches and an half, of about an inch breadth, not very flat. The upper Mandible hath at the end a round tip or nail, such as is seen in most Birds of this kind. The lower Eye-lids are white: The Legs and Feet of a Saffron-colour; the Claws brown; but that of the back-toe almost white: The inmost fore-toe is the least. The membranes connecting the Toes are of a more fordid colour than the Toes. The Wind-pipe at its divarication hath a vessel we call a labyrinth.

Bbb 2

The

The Legs are feathered down to the Knees. In the *Mallard* the Head and upper part of the Neck are of a delicate shining green: then follows a ring of white, which yet fails of being an entire circle, not coming round behind. From the white ring the Throat is of a Chestnut colour down to the Breast. The Breast it self and Belly are of a white ash-colour, bedewed or sprinkled with innumerable dark specks, as it were small drops. Under the Tail the feathers are black. The upper side of the Neck from cinereous is red, sprinkled in like manner with spots. The middle of the Back between the Wings is red, the lower part black, and still deeper on the Rump, with a gloss of purple. The sides under the Wings, and the longer feathers on the Thighs are adorned with transverse brown lines, making a very fair shew. In them the white colour seems to have a mixture of blue.

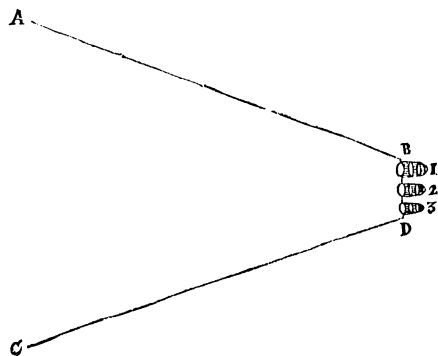
* *Falci*,
dusky.

The lesser rows of Wing-feathers are red: The long scapular feathers are silver-coloured, elegantly variegated with transverse * brown lines. In each Wing are twenty four quills, the outmost ten of a dusky or dark brown: The second decade have white tips, then their outer Webs are of a shining purplish blue colour: But between the white and blue intercedes a border of black. The tip of the twenty first is white, the exterior Web of a dark purple: The middle part of the twenty second is a little silver-coloured: The twenty third is wholly of a silver-colour, yet the edges on each side are black: The twenty fourth is likewise of a silver-colour, only the exterior border black. The outmost covert-feathers are of the same colour with the quills; but those immediately incumbent on the purple-blue quills have black tips, and next the tips a broad line or cross bar of white, so that the blue spot is terminated with a double line, first black, and above that white. The Tail hath twenty feathers, ending in sharp points. The four middle of these are reflected circularly toward the Head, being black, with a gloss of purple. The eight next to these on each side are white, especially the outer ones, and on their exterior Webs, the nearer to the reflected ones, the greater mixture of brown have they. The covert-feathers of the inside of the Wing, and the interior bastard Wing are white.

In Winter time they company together, and fly in flocks; in the Summer by pairs, *Duck* and *Mallard* together. They build their Nests among Heath or Rushes, not far from the water, seldom in trees; laying twelve, fourteen, or more Eggs before they sit. The Female or Duck hath neither green head, nor ringed Neck, but both particoloured of white, brown, and dark red. The middle parts of the Back-feathers are of a dark brown, the edges of a pale red.

As for the great *Ring-Duck* of *Gesner*, he being very brief in describing of it, and using only general notes, and my self having never seen any such bird, I know not what to make of it, and do doubt whether there be any such Bird in nature; especially because the description he brings of it, made by a certain *German*, doth in all things answer to our *Mallard* above described.

In the Fens in the Isle of *Ely*, *Norfolk*, and *Lincolnshire*, about *Crowland*, and elsewhere, *Ducks*, *Wigeons*, *Teal*, and other birds of this kind, at what time they moult their feathers and cannot fly, are taken yearly in great numbers in Nets placed after this manner.



AB, CD

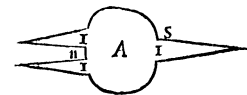
AB, CD are Nets extending a great length in form of a wall or hedge, inclining one to another, at the further end of which, before they concur in an angle are placed 1, 2, 3, or more conoidal Nets, like tunnelling Nets for *Partridges*. Which things being so prepared, and the day for fowling set, there is a great concourse of men and boats. These drive the Birds, now unable to fly, into the grounds enclosed in the Nets with long Staves and Poles, and so by degrees into those Conoidal Tunnels, 1, 2, 3, disposed, as we said in the angle. By the way many are knocked down by the Boatmen and other Rabble with their Poles, others and more are driven upon the side Nets AB, CD. These belong to them who own the Nets (for the Nets for the most part have several owners) those fall to their shares that killed them. Those which are cooped up, and driven into the end-tunnels 1, 2, 3, belong to the Lord of the Soil. To one Fowling sometimes you shall have four hundred Boats meet. We have heard that there have been four thousand *Mallards* taken at one driving in *Deeping Fen*.

The *Mallards* change their feathers (we call it *Moulting*, a word derived from the Latine, *muto*, signifying to change) when the Hens begin to sit; the Ducks not before their young ones are grown up and ready to fly, at what time they come hither for that purpose, viz. the *Mallards* about the end of *May*, the *Ducks* not before the end of *June*, when the *Mallards* have recovered their feathers and begin to fly again. The *Cock-Teal* and *Wigeons* accompany the *Ducks*, and moult together with them. The Hens of these Birds moult something later. So that this kind of sport or (if you please) exercise lasts from the middle of *June* till the end of *August*. In a Weeks time all the old feathers fall off; the new ones come not to their full growth in less than three Weeks space. When they begin to moult they are all very fat and fleshy; but before their feathers be perfectly grown, they become lean. The *Ducks* and *Mallards* are called *whole fowl*; the *Wigeons* and *Teal* *half fowl*, because they are sold for half the price of the other.

Here it may be worth the while to enquire, why Birds do yearly moult their feathers? Mr. *Willughby* supposes that there is the same cause of the casting the feathers in Birds, that there is of the falling off of the hair in Men and other Animals upon recovery from a Fever or other disease, or upon refection after long abstinence. For in Cock-birds the heat and turgency of lust, is, as it were, a kind of Fever, and so in the Spring-time their bodies being exhausted by the frequent use of Venerie, they become lean: But in the Hens the time of sitting and bringing up their Young answers to a disease or long abstinence, for at that time they macerate themselves by hunger and continual labour. When these times are over, both Sexes returning to mind their own bodies and feed for themselves, do in a short time recover their flesh and grow fat again, whereupon the pores of the skin being dilated the feathers fall off.

Our Country-men (imitating, as I suppose, the *Low Dutch*, who were Authors of the invention) in maritime and fenny places, in Pools prepared by a new Artifice and fitted with their Channels and Nets, and stored with Coy-Ducks, take yearly in, the Winter-time *Duck* and *Mallard*, *Wigeon*, *Teal*, and other Birds of the Duck-kind in great numbers.

A place is to be chosen for this purpose far remote from common High-ways, and all noise of people, and in which those Birds are wont in great numbers to frequent. Having pitch'd upon a convenient place, prepare a large Pool A, set round with Willows and Reeds. On the South side N, or the North side S of this Pool draw as many Ditches or Channels 1 1 1 (Pipes they call them) as you please or think needful; let them be broad at the Pool, and by degrees narrower till they end in a point. Along these Channels on each side at little distances thrust into the banks rods or wands of wood, and bending them over-head bind them two together by pairs all along in form of an Arch or Vault from the beginning of the Channel to the end. As the Channels grow narrower and narrower so the bows are made lower and lower. The Poles thus bent in fashion of Bows are to be covered with Nets cast over them, and so the Pipes are made: These Arches or Vaults end in long Cylindrical Nets kept stretcht by hoops like bow-nets, that end which respects the Arch being open, the other shut. Along the banks of the Pipes are made many hedges or walls n n n of Reeds woven thick together, parallel to each other, but standing obliquely to the Bank, the acute angles respecting the Pool, and along the bank of the Pool, at the exit of the Pipes is likewise a hedge



hedge of Reeds (1 m) to be drawn. The *Coy-Ducks* are to be fed at the mouth or entrance of the Pipes, and to be accustomed at a token given them by a whistle to hasten to the Fowler. The Fowler first walks about the Pool, and observes into what Pipe the Birds gathered together in the Pool may most conveniently be enticed and driven, and then casting Hemp-seed, or some such like thing at the entrance thereof, calls his *Coy-ducks* together by a whistle. The wild fowl accompany them, and when the Fowler perceives them now entered into the Pipe, he shews himself behind them through the interstices of the hedges n, n, n, which being frightened, and not daring to return back upon the man, swim on further into the *Pipe*, then by other interstices the Fowler shews himself again behind them, till at last he hath thus driven them into the Cylindrical Nets. If any Birds rise and endeavour to fly away, being beaten back by the Nets spread over the Pipe they fall down again into the Channel. The whole art consists in this, that the Birds within the Pipes may see the Fowler, those in the Pool not seeing him. So those only seeing him, these notwithstanding often enter the Pipes, and so sometimes besides those the Fowler drives before him there are others taken the second or third time. The *Coy-ducks* go not into the Cylindrical Nets, but stay without and entice others. Some train up a Whelp for this sort of fowling, teaching him to compass the hedges, and shew himself behind the Birds, to which purpose there are holes made in the hedges for him to pass freely. The Whelp in compassing the hedges ought always to keep his tail directed toward the Pool, his Head toward the Pipe, and so he terrifies the Birds before him, and drives them forward: Those behind him he allures and tolls forward, they following him to gaze at him as a new and strange object. When the wind blows sideways the Birds are more easily driven whither the Fowler pleases, than when it blows * directly contrary to them, or with them. For when it is directly contrary the Birds are very hardly driven to bear up against it: When it blows just behind them, it brings the scent of the Man or the Whelp into their Nostrils. Wherefore (as we said) the Channels are drawn either on the North or South end of the Pool, because the West wind with us as it is the most boisterous, so is it by far the most frequent of all.

Of the *Coy-ducks* some fly forth and bring home with them wild ones to the Pool, others have the outmost joint or pinion of their Wings cut off, so that they cannot fly, but abide always in the Pool. The Fowlers house is to be covered with trees and reeds, and hid as much as possible.

§. II.

* *Anas melleo* The Gadwall or Gray, perchance the * Mitelenten of Gessner: *Anas platyrhynchos* rostro nigro & plano. Aldrov. p. 233. forte *Anas strepera* Gessneri, Aldrov. p. 234.

Its bigness it equals or exceeds the *Pechard*, and comes very near the *Duck*. Its length from Bill to Tail was nineteen inches: Its breadth thirty three: Its Bill from the tip to the corners of the mouth two inches long. It is long-bodied: Its whole Rump black: Its Back brown, the edges of the feathers being of a whitish red: Its Chin and Cheeks white, speckled with small brown specks. Its head from blue inclines to black, the edges of the feathers being of an ash-colour in the Throat, and of a whitish red near the Breast. The lower part of the Neck and upper part of the Breast and Shoulders are covered with a most beautiful Plumage coloured of black and white. The extreme edges and as it were fringes of the feathers are reddish, then a black line of a semicircular figure encompasses the tip of the feather, running parallel to its edges; within this is included another semicircular white line parallel to it, and in the white again a black. The Breast is white: The Belly darker, with transverse black spots. Under the Tail the feathers are crossed with brown. The lesser covert-feathers under the Wings and the interior bastard Wing are purely white. The sides are curiously variegated with alternate black and white lines. The Tail is short, scarce appearing beyond the feathers incumbent on it, round-pointed, made up of sixteen feathers with sharp tips, of a white colour, especially on the under side, for the two middle ones above are of a dark ash-colour: In the rest, especially the outmost, there is something of red mingled with the white: The edges of all are whitish.

Each Wing hath twenty six quills, of which the first ten are brown; the three next tip with white: The four following have their outer Webs black, their tips also being whitish: In the three succeeding the inner Web of the feather is wholly white:

The

The four next the body are of a cinereous or reddish brown. The feathers of the second row, incumbent on the white quills, have their exterior Webs of a black purplish shining colour. In the third row are spots of red scattered.

Its Bill is like that of the common *Duck* or *Teal*, flat, broad, with a hook or nail at the end: The lower Mandible inclines to a Saffron colour; of the upper the sides are of the same colour, the middle part black: The Nostrils great.

The Legs are feathered to the Knees: The Feet whitish: The hind-toe small: The inner fore-toe shorter than the outer: The membranes connecting the Toes black. It hath a huge Gall-bladder.

The Female hath the same spots in the Wings, but far duller colours; wants the black colour on the Rump, the feathers there growing having pale red edges; as have also those on the Back and Neck. It wholly wants those elegant semicircular black and white lines and spots in the Neck and Breast feathers, and the streaks under the Wings.

This Bird may be distinguished from all others of the *Duck-kind* by this characteristic note, that it hath on the Wings three spots of different colour, one above another, viz. a white, a black, and a red one.

§. III.

* *Gessner's Muggent*: *Anas muscaria*, Aldrov. lib. 19. cap. 41.

It is so called because it catches flies flying upon [or above] the water. It is of the bigness and shape almost of a tame *Duck*. The Bill is broad and flat, its upper Chap being wholly of a Saffron-colour, in length beyond the feathers two inches: it is serrate on both sides with broad and in a manner membranaceous teeth, pretty high or deep; but those of the nether Chap are lower, and * rise not much, making long *fringe*. The Plumage almost all the body over is coloured of blackish, fiery colour, and white, with a mixture of Weasel colour in some places, or in short almost like that of the *Partridge*, that is, testaceous, as of most of the pulveratious kind, but yet differing. Its Feet are yellow: Its Toes joined by blackish membranes: Its Neck both on the upper and under side is speckled [*streaked*] with the colours we mentioned. The crown of the Head is blacker than the other parts, which colour also is seen in the Wings, which are shorter than the Tail. Thus far *Gessner*. This Bird, if it be different from the *Gadwall*, as the colour of the Bill and Feet might persuade one, is to me unknown.

§. IV.

The common *Wigeon* or *Whewer*: *Penelope* Aldrovandi, tom. 3. p. 218. lin. 30. *Anas fistularis*, *Argentoratenfis* Ein Schmey.

It weighs twenty two ounces: Its length from Bill to Feet is twenty inches. The Head and upper end of the Neck are red. The crown towards the Bill is of a dilute colour, from red inclining to a yellowish white. The upper part of the Breast and sides as far as the Wings is beautified with a very fair tincture of a red Wine colour, with small transverse black lines. The scapular feathers, and those on the sides under the Wings are very curiously varied with narrow transverse black and white waved lines. The middle of the Back is brown, the edges of the feathers being cinereous, especially towards the Tail. The feathers behind the Vent, next the Tail are black: The Breast and Belly white, with a little mixture of yellow. On both sides under the Legs are spots of a reddish brown: Under the Tail are white feathers alike spotted, mingled with the black. The Tail is sharp pointed, and consists of fourteen feathers, of which the six outer on each side are brown, their exterior edges being whitish; the two middle ones are black, with a mixture of ash-colour.

Of the quill-feathers the ten outmost are brown: The next ten have white tips, and among them the fifteenth, sixteenth, seventeenth, and eighteenth have their outer webs first of a black purplish colour, then as far as they appear beyond the covert-feathers of a lovely blue. In the eighteenth feather the exterior half of the outer web is of a purplish black, the interior toward the bottom is cinereous: But along the border of the black are small white spots from the white tip to the bottom. The twentieth feather is all of a pale or white ash-colour: The twenty first and

twenty

twenty second are white about the edges, black in the middle along the shaft. The small covert-feathers of the Wings are of a light brown or dark ash-colour; but those that cover the quills from the tenth to the twentieth are particoloured of brown, white, and cinereous.

Mr. Willughby in this and other Birds is, in my opinion, more particular and minute in describing the colours of each single feather of the Wings and Tail than is needful; sith in these things nature doth as they say (sport her self, not observing exactly the same strokes and spots in the feathers of all Birds of the same sort.

In the structure of the Mouth, Tongue, and Head, it differs little from the common wild Duck, unless perchance the Head be less in proportion to the body. The upper Mandible of the Bill is of a lead-colour, with a round black nail at the end. The Feet from a dusky white incline to a lead-colour. The Claws are black: The outmost Toe longer than the inmost: The back-toe short.

It feeds upon grass and weeds growing in the bottoms of Rivers, Lakes, and Channels of water, also upon Whilks, Periwinkles, &c. that it finds there. The Males in this kind at Cambridge are called *Wigeons*, the Females *Whewers*.

The flesh of it for delicacy is much inferior to that of *Teal*, or indeed *Wild-Duck*.

§. V.

The Sea-Pheasant or Cracker: *Anas caudacuta*, Aldrov. tom. 3. pag. 234.
Coda lancea at Rome.

IT is of the bigness of the common *Wigeon*; of twenty four ounces weight: twenty eight inches long from Bill to Tail: From tip to tip of the Wings extended thirty seven inches broad.

Its Head is slender, its Neck long for this kind: Its Bill from the tip to the angles of the mouth two inches and an half, of equal breadth almost throughout; the nether Mandible wholly black, the upper partly blue, partly black, viz. black in the middle, on the sides beneath the Nostrils blue: Black also at the corners of the mouth, at the very tip, and in the lower edges near the tip. The colour of the Plumage on the whole Head is ferruginous or brown, behind the Ears tintured with a light purple. Beyond the Ears on each side from the hinder part of the Head begins a line of white which passes down the sides of the Neck to the Throat. All the feathers between or adjacent to these lines are black: Under the black the Neck is ash-coloured, then curiously varied with transverse black and white lines, as is also almost the whole Back. The long scapular feathers are black in their middle parts, but the exterior have their outer Webs almost to the shafts black, their inner (which are much the narrower) varied with white and black [brown] lines. All the nether part, Neck, Breast, Belly, to the very Vent is white. Yet in the lower Belly the white is a little darkened with a mixture of cinereous. The feathers under the Tail are black.

As for the Wings, the ten outmost quills and most of the covert-feathers are of a dark cinereous [In some Birds the interior edges of the seventh, eighth, ninth, and tenth quills are white.] The second deced of quills is particoloured; for the tips of all are white, [or from white red] then in the outer Web succeeds a black line, the remaining part thereof, as far as appears beyond the incumbent feathers being of a glistering purple, or purplish blue colour: The interior Webs of all are of the same colour with the rest of the feathers. Of the following the exterior Webs are cinereous, the interior black. The covert feathers of the second row immediately incumbent on the second deced of quills have their tips of a fair red or *Lion*-colour. The long feathers covering the Thighs are elegantly varied with black and white transverse lines, beneath which the Plumage is yellow.

The Tail is made up of sixteen feathers, all ash-coloured excepting their exterior edges, which are whitish. The two middlemost run out into very long and sharp points, being produced two inches and an half beyond the rest: Whence also this Bird is in some places of England called the Sea-pheasant.

Its feet are of a lead-colour, darker about the joints. It hath a small Labyrinth, and a great Gall.

The Hen is like in colour to the common *Wild-Duck*, but fairer, and variegated with more full and lively white and brown colours. The Wing-feathers agree in colour with those of the Cock, save that they are duller and less lively. The Belly is reddish,

reddish, the middle part of each single feather being black. The Chin is white, with a tincture of red. The Back of a dark brown, with transverse lines and beds of a pale red. The Breast of a fordid white, and the Belly yet darker.

This Bird may be distinguished from all others of the *Duck*-kind by the length of the middle feathers of its Tail as by certain and characteristic note.

§. VI.

The Teal, *Querquedula secunda*, Aldrov. p. 209.

THIS, next to the *Summer-Teal*, is the least in the *Duck*-kind; weighing only twelve ounces, extended in length from the tip of the Bill to the end of the Feet fifteen inches; in breadth, measuring between the ends of the Wings spread, twenty four. Its Bill is broad, black, at the end something reflected upwards: The Eyes from white incline to hazel-coloured. The Nostrils are of an oval figure. The top of the Head, Throat, and upper part of the Neck of a dark bay or spadiceous colour. From the Eyes on each side to the back of the Head is extended a line of a dark, shining green. Between these lines on the back of the Head a black spot intervenes. Under the Eyes a white line separates the black from the red. The feathers investing the lower side of the Neck, the beginning of the Back, and the sides under the Wings are curiously varied with transverse waved lines of white and black. The region of the Crawl in some is yellowish, elegantly spotted with black spots, so situate as somewhat to resemble scales. The Breast and Belly are of fordid white or grey colour. Under the Rump is a black spot encompassed with a yellowish colour.

Each Wing hath above twenty five quills. Of these the outmost ten are brown; the next five have white tips; under the white the exterior Web of the Feather is black: In the sixteenth begins the green, and takes up so much of the feather as we said was black in the precedent three. The exterior Web of the twenty third is black, with some yellowness on the edges. The covert-feathers of the black quills have white tips, of the green ones have tips of a reddish yellow: Else the Wings are all over brown [dusky.] The Tail is sharp-pointed, three inches long, made up of sixteen feathers, of a brown or dusky colour.

The Legs and Feet are of a pale dusky colour, the membrane connecting the Toes black: The inmost Toe the least. The Back-toe hath no fin annexed. The Wind-pipe in the Cock is furnished with a Labyrinth: in the Hen we found none.

The Female differs from its Male in the same manner almost as the *wild Duck* does from the *Mallard*, having neither red nor green on the Head, nor black about its Rump: Nor those fine feathers variegated with white and black lines on the back and sides.

This Bird for the delicate taste of its flesh, and the wholesome nourishment it affords the body, doth deservedly challenge the first place among those of its kind.

§. VII.

The Garganey: *Querquedula prima* Aldrov. t. 3. p. 209. Kernel at Strasburgh.

IN bigness it something exceeds the common *Teal*; yet that Mr. Willughby described weighed no more than the common *Teal*, viz. twelve ounces. Its length from Bill to Claws was seventeen inches: Its Breadth from tip to tip of the Wings extended twenty eight. For the shape of its body it was very like to the common *Teal*: Its Bill also black: Its Legs and Feet livid with a certain mixture of green, [Mr. Willughby hath it from dusky inclining to a lead-colour.] The back-toe small.

The crown of the Head is almost wholly black, but the Bill besprinkled with small reddish-white specks. From the inner corner of the Eye on each side begins a broad white line, which passing above the Eyes and Ears is produced to the back of the Head, till they do almost meet. The Cheeks beneath these white lines and the beginning of the Throat were of a lovely red colour, as if dashed with red wine, having white spots or lines along the middle of each feather about their shafts. Under the Chin at the rife of the lower Mandible is a great black spot. The whole Breast is curiously varied with black and dusky, transverse, arcuate [elliptical] waved lines in each feather. The Belly in some is white, in others tintured with yellow: But

Ccc toward

toward the Vent are brown lines, and bigger spots under the Tail. The colour of the Back is brown, with a purplish gloss. The Thighs are covered with feathers handsomely variegated with transverse black and white lines. The scapular feathers next the Wings are ash-coloured, the rest are of a very beautiful purple colour, with white lines in the middle.

Each Wing hath twenty five quils, the outmost ten of which are brown on the outside the shaft, on the inside of a Moufe-dun: The eleven next have white tips, beneath the tips, as far as they appear beyond the covert-feathers, their exterior Webs of a * shining green, the interior and the bottoms of the feathers being of a dusk or Moufe-dun. The rest are brown, only the exterior Webs edged with white. The lesser rows of Wing-feathers are ash-coloured excepting those immediately incumbent on the quils, some of which have white tips.

* Mr. Willoughby describes them to be of a purplish colour, with a mixture of cinereous.

The Tail is short [three inches] and when closed ending in a sharp point, of a dusky or dark brown colour, consisting of fourteen feathers; the outmost feathers are varied with spots of a pale or whitish red. The foal of the foot is black.

The Cock hath a Labyrinth at the divarication of the Wind-pipe, the Hen none.

The Hen is less than the Cock, and duller-coloured, wants the black spot under the Chin, and the red colour of the Cheeks. The Wings underneath are as in the Cock, above more brown. The Back coloured like the Cocks; but the scapular feathers have not those beautiful colours.

§. VIII.

* Of the Summer-Teal, called by Gesner Ana circia.

* Teal.

Gesner takes that Duck they call *Circia* to be of the kind of the lesser * *Querquedula*: A certain German renders it in *High Dutch*, *Ein Birkkilgen*, and saith it is so called from the sound of its voice; that it is like a small Duck, but differs in the colour of the Wings and Belly. For the Wings want those glittering feathers, and the Belly is more spotted.

This kind (so he proceeds) I think is also found in our Lakes, for I saw not long since a small sort of Duck taken in the beginning of January, little bigger than a *Dubchick*, brown all over, having the Bill of a Duck, that is broad and brown: All its dusky coloured Legs and Feet; the Neck an hand-breadth long, the rest of the body six inches. But it was a Hen, and had Eggs in the Belly. The Cock, I guess, hath more beautiful colours. In the Stomach I found nothing but small stones, and the seeds of some water-plants, almost of the fashion of Lentiles (but lesser and thicker) and reddish. Thus far Gesner.

From this short description, and that too of a Hen bird, we cannot certainly gather, whether it be a distinct Species from the precedent. But we suspect it was of that bird which our Country men call the *Summer-Teal*, which Mr. Johnson informs us is of that bigness; for we have not as yet seen it.

Its Bill is black: The whole upper side of a dark grey or light brown; the edges [or extremes] of the feathers in the Back are white. In the Wings is a line or spot of an inch breadth, partly black, partly of a shining green, terminated on both sides with white. In the Tail the feathers are sharp-pointed. The whole under side seems to be white, with a slight tincture of yellow; but on the Breast and lower Belly are many pretty great black spots. The Legs are of a pale blue, the membranes between the Toes black. This is the least of all Ducks. In its stomach I found nothing but grafs and stones. This description we owe to Mr. Johnson.

§. IX.

* A wild Braslian Duck, of the bigness of a Goose. Marggrave.

It hath a black Bill, dusky Legs and Feet. It is all over black except the beginnings [setting on] of the Wings, which are white; but that black hath a gloss of shining green. It hath a crest or tuft on its head consisting of black feathers, and a corrugated red mass or bunch of flesh above the rise of the upper Mandible of the Bill. It hath also a red skin about the Eyes. It is very fleshy, and good meat. They are commonly shot sitting on high trees: For after they have washed themselves in cold water, they fly up high trees, for the benefit of the fresh air and Sun.

§. X.

§. X.

* A Wild Braslian Duck, called, *Ipacati-Apao*, by the Portuguese, *Pata*, that is, A Goose. Marggrave.

It is of the bigness of a Goose of eight or nine months, of the very shape and figure of our common Ducks. The Belly, lower part of the Tail, the whole Neck and Head are covered with white feathers; the Back to the Neck, the Wings and top of the Head with black, having a mixture of green, as in the Necks of our Ducks. In the Neck and Belly are black feathers, all about sparsely mingled with the white. It differs from our Country Ducks in these particulars: 1. That it is bigger. 2. It hath indeed a Duck's Bill, but black and hooked at the end. 3. Upon [or above] the Bill it carries a fleshy crest, broad, and almost round, of a black colour, remarkably spotted with white. The Crest is of equal height. Between the Crest and the Bill (*viz.* on the top of the Bill) is a transverse hole of the bigness of a Pease, conspicuous on both sides, which serves instead of Nostrils. 4. The colour of the Legs and Feet is not red, but of a dusky ash-colour. It is full of flesh, and good meat. It is found every where about the Rivers.

I had another in all things like this, excepting that those long feathers in the Wings were of a shining brown colour. I suppose this is the Male, the other the Female.

§. XI.

* The first Braslian wild Duck, called *Mareca*, of Marggrave.

It hath a Duck's Bill, of a brown colour, at the rise whereof on each side is a red spot. The Head above is of a grey Hare-colour: The sides of the Head under the Eyes all white. The whole Breast and lower Belly hath an obscure resemblance of the colour of Oaken boards; and is besides variegated with black points [specks]. The Legs and Feet are black; the Tail grey. The Wings elegant, at the setting on of a dark grey colour. * The quill-feathers on one side are of the former colour, but all the outer half of them [*medietas extrema*] of a pale brown: In the middle they are of a shining green, with a border of black; like the colour of the Mallards Neck. Its flesh is very good meat. The outmost of a light brown, and the middlemost of a shining green, with a fringe or border of black.

* I suppose he means, that the inner quils, or those next the body are of a dark grey, as was before intimated.

§. XII.

* The second Braslian wild Duck, called *Mareca*, of Marggrave.

It is of the same bigness and figure with the precedent, hath a black shining Bill. The top of the Head, the upper part of the Neck, and the whole Back are of an Umber colour mixed with brown [*fusco*]. Under the Throat it is white. The Eyes are black, and before each Eye is a small round spot of a yellowish white colour. The whole Breast and lower Belly are of a dark grey, with a mixture of golden. The Tail is black: The Wing-feathers dusky, with a gloss of shining green, and the middle feathers of the Wings are of a rare green and blue shining in a dusky: Here also they have a waved line of black: But the * end [*extremitas*] of the quill-feathers is wholly white. The Legs and Feet are of a bright red or vermilion colour. The Bird roasted colours the hands of those that touch it, and linnen cloth with a sanguine colour. It hath well tasted flesh, but a little bitter.

* Or border, or perchance outside.

CHAP. IV.

Of Tame Ducks.

§. I.

The common Tame Duck: *Anas domestica vulgaris*.

IT is called by the Greeks, Νῆσσα or Νῆσσα, from the Verb νῆν, signifying, to swim: As *Anas* also by *Varro* is derived from *no, nas*, to swim. It is a Bird every where known, and therefore it would not be worth while to bestow many words in exactly describing it. It is less than a *Goose*, almost as big as a *Hen*, but much lower, having a broad, flat Bill, a broad Back, short Legs, situate backward, *that in swimming it may more strongly strike the water with the finny oars of its Feet*: As *Aristotle* rightly. Hereupon they become less convenient for walking, so that this Bird goes but slowly, and not without some difficulty. Ducks vary infinitely in colours, as do *Hens*, and other tame fowl.

Between the *Duck* and the *Drake* there is this difference, that he hath growing on his Rump certain erect feathers reflected backwards toward the Head, which the hath not. The *Duck* laystwelve, fourteen, or more Eggs as big as *Hens* Eggs, and white, with a light tincture of blue or green, the Yolk being of a deeper and redder colour.

The best Physicians (saith *Aldrovand*) disallow the flesh of these Birds, because they are hard and of difficult concoction, and agree not with the stomach: We rather think them disagreeable to the stomach, for their moistness and clamminess than for their hardness, whence also they are apt to produce excrementitious, gross, and melancholic humours. The flesh of wild Ducks is preferred before that of tame, as being more savoury and wholesome.

The *Drake* hath a certain bony vessel or bubble at the divarication of its Windpipe, which we are wont to call a labyrinth; of the use whereof we have said as much as we thought fit, in the first Book at the end of the second Chapter.

Of the virtues and use of the Duck, and its parts in Physic, out of *Schroder*.

1. A live Duck allwages Colic pains, the feathers being plucked off, and the naked part applied to the Belly.

2. The Fat heats, moistens, mollifies, digests, dissolves. Therefore is of use in inward and outward pains, viz. of the sides and joints, in the cold distempers of the Nerves, &c.

Note. This Fat is preferred before all others, especially that of the wild Duck.

3. The blood is * Alexipharmaceutical, and hereupon is sometimes received into Antidotes. It is a known history which *A. Gellius* in the seventeenth Book of his *Noctes Attice*, Chap. 16. relates. The *Pontic Duck* is said to maintain her self by feeding commonly upon Poisons. It is also written by *Lenaxus Cu. Pompeys * libertus*, that *Mithridates*, that King of *Pontus*, was skillful in Physic, and cunning in remedies of that kind: And that he was wont to mingle their blood in Medicaments, which were of force to digest and carry off Poisons; and that that blood was the most effectual ingredient in such Confections. Moreover that the King himself by the use of such Medicines did secure himself against the secret practices of such as sought to poison him at Feasts and Banquets. Yea, that he would wittingly and willingly for ostentation sake oftentake a draught of violent and quick poyson, and yet received no harm by it. Wherefore afterwards when he was overthrown in battle by the *Romans*, and had fled into the furthest parts of his Kingdom, and resolved to die, and had in vain made trial of the strongest Poisons to hasten his death, he ran himself through with his own Sword.

4. Its dung is applied to the bites of venomous beasts.

* Good against poison and infection.

* A freed man.

§. II.

§. II.

The hooked-bill'd Duck.

IN shape of body and outward lineaments it is very like the common tame Duck; differs chiefly in the Bill, which is broad, something longer than the common Ducks, and bending moderately downward. The Head also is lesser and slenderer than the common Ducks. It is said to be a better layer.

§. III.

The Muscovy Duck: *Anas moscata*, an *Cairina*, *Aldrovand*.

IT is in this kind the biggest of all we have hitherto seen. The colour both of Male and Female is for the most part a purplish black. Yet I once saw a Duck of this kind purely white. About the Nostrils and the Eyes it hath red * Caruncles. It hath a hoarse voice; and scarce audible, unless when it is angry. Its Eyes are rounder than ordinary: Those of the young ones at first are of a sordid green, afterwards become continually whiter and whiter. * Tubercles naked flesh.

§. IV.

The Cairo-Duck of *Aldrovand*.

THESE Ducks *Aldrovand* thus briefly describes. They exceed ours in bigness of body. The Male also in this kind is bigger than the Female. Its Bill where it joins to the Head is very thick and tuberosus; thence to the very tip it is continued narrower, till it ends in a sharp and crooked hook: It is of a black colour excepting toward the end, where it hath a good large red spot, and in its beginning another small one of the same colour, but more dilute. Its Head was black and tufted: Its Throat just under the Bill was powdered with whitish specks. The Eyes yellow, wherein appeared many little tawny veins. The whole body almost was all black. The feathers of the Back in the beginning, and also in the middle, were black, in the end green, or at least black, with a tincture of green. In the Wings also and in the Tail were some green feathers to be seen, and one or two white ones, which made a kind of white spot. The Legs were very strong, but short, coming near to a Chefnut colour, as did also the feet. The Female was less than the Male, and had a less tuberosus Bill, where it was joined to the Head, marked with a pretty broad line, partly white, and partly red. Besides, that spot we mentioned, which in the Bill of the Male was red, in the Bill of this was of an ash-colour, wherewith something of red was mixt: Else it was of a colour from black inclining to cinereous, if you except two whitish spots, which in the middle of the Bill turning one to another, each by itself formed the letter C. It had no tuft on its black Head. Its Breast also was of the same colour, spotted with white pricks. The Back as in the Male, but the Wings were much greener than his, and spotted also with two white spots. In other particulars it differed little or nothing from him.

§. V.

* The Guinea Duck: *Anas Libyca*, *Aldrov.* and *Bellon.* which we take to be the same with the *Muscovy* and *Cairo Duck*.

THIS kind of Duck *Bellonius* thus describes. A few years ago a certain kind of Ducks began to be kept in *France*, of a middle size, between a *Goose* and a *Duck*, having a broken voice, as if it had distempred or ulcerated Lungs. Now there is so great plenty of them in our Country, that they are every where kept in Cities, and publicly exposed to sale: For at great entertainments and Marriage Feasts they are sought for and desired. They have short Legs: The Male is bigger than the Female; and, as is usual in other Birds, of a different colour, so that it is hard to ascribe any certain colour to it, unless one would say that it comes near to a *Duck*-colour. They are for the most part either black or particoloured. They have a Bill in a manner

manner different from *Geese* and *Ducks*, hooked at the end, also short and broad. In the Head rises up something of a red colour like a Crest, but much different from a Cocks Comb. For it is a certain tuberosus eminency, situate between the Nostrils, exactly resembling the figure of a red Cherry. The Temples near the Eyes are without feathers, the skin shewing like a red hide; of the same substance with that Cherry-like bunch between the Eyes: By which Marks I think it may be certainly known and distinguished from other Birds. But this one thing may seem very strange in this Bird, that it hath to great a privy member, that it is an inch thick, and of four or five inches length, and red like blood. If it were not very chargeable many more of them would be kept than are: For if you give them but meat enough they will lay many Eggs, and in a short time hatch a great number of Ducklings. Their flesh is neither better nor worse than that of a tame *Gooë* or *Duck*.

This seems to me to be the very same Bird with *Aldrovands* *Cairo-Duck*, for most of the marks do agree, as will appear to him who will take the pains to compare the descriptions; and also the same with our *Muscovy Duck*. For *Scaligers* *Indian Duck*, which *Aldrovand* makes the same with his * *Libyc*, is the same with our *Muscovy-Duck*, or we are very much deceived. So that I strongly suspect our *Muscovy-Duck*, the *Guinny Duck* of *Bellonius*, and *Aldrovands* *Cairo-Duck*, yea, and *Gesners* *Indian Duck* too, to be all one and the same bird, more or less accurately described. Perchance also the Birds themselves may differ one from another in those tuberosus eminencies and naked skin about the Bill, and upon the Bill between the Nostrils.

* *Asiatic* or *Guinny Duck*.

§. VI.

* *Gesners* *Indian Duck*, which perchance may be also the same with our *Muscovy*.

Here is with us (saith he who sent us [*Gesner*] the figure and description of this Bird out of *England*) a *Duck* brought out of *India*, of the same shape of body, the same Bill and Foot with the common *Duck*, but bigger and heavier by half than it. Its Head is red like blood, and so is a good part of the Neck adjoining, on the back-side. All that red is a callous flesh, and divided by incisures; and where it ends at the Nostrils, it lets down a Caruncle of a different figure from the rest of the flesh, like that of a *Swan*, contiguous [or joyned] to the Bill. Its Head is bare of feathers, and that part also of the Neck which is red, save that on the top of the Head, through the whole length of it, there is a crest or tuft of feathers, which when it is angry it sets up. Under the Eyes at the beginning of the Bill the skin is spotted with black spots placed in no order: Above the Eye also are one or two spots tending upward. The Eye is yellow, separated from the rest of the Head by a circle of black. Under the further end of the Eye backwards is a singular spot separated from the rest. The whole Bill is blue, only it hath a black spot at the tip. The feathers all along the rest of the Neck are white. At the setting on of the Neck is a circle of black, spotted with a few white spots, and unequal, narrower below, broader above. Behind this circle the Plumage of all the lower Belly is white, of the upper side of body brown, but the white Plumage is divided at the top by that black circle. The ends of the Wings and the Tail are of a shining green like *Cantharides*. The skin of the Legs is brown, with light, circular incisures. The membrane between the intervals of the Toes is more pale, sprinkled with two or three brown spots, placed in no order, except in the left foot, where there are six set in a row alongst the outmost Toe. It walks softly by reason of the heaviness of its body. Its voice is not like that of other *Ducks*, but hoarse, like a mans that hath his Jaws and Throat swollen with a cold. The Cock is bigger than the Hen. The Hen is like the Cock, but hath not such variety of colours. It gets its living out of muddy waters, and delights in such other things as the common *Duck* doth.

There are many things in this description, which do persuade me, that this Bird also is no other than our *Muscovy Duck*: At equal bigness, naked tuberosus flesh about the Bill, a hoarse voice, the Cock being bigger than the Hen, &c. Nor is the diversity of colours a sufficient argument of the contrary: For that they (as we have often said) in tame Birds of the same kind vary infinitely.

§. VII.

§. VII.

The *Brazilian Ipeca-guacu* of *Piso*.

It is a domestic, whole-footed bird, reputed for the goodness of its flesh. As to the bulk and shape of its body it is of a middle proportion between our Country *Ducks* and *Geese*; but in the beauty of its feathers and colours excells them both. Its Bill from the end to the middle is yellow: The middle of its Head is curiously tintured with red; the whole body from the crown to the Tail being of a delicate white colour like a *Swan*. It hath *Ducks* Feet, of a yellowish red. It feeds fat as well upon Land, as in Pools. For the goodness of its flesh it is not inferior to our *Ducks*, and had in esteem by persons of quality. It is a fruitful bird, lays great Eggs, and a great many, almost all seasons of the year, dispatching its sitting in a short time. It is also salacious; its penis and other internal parts serving for generation, being more than usually strong and great. As for its bowels and entrails, they are of like constitution and make with those of our *Ducks*.

AN

A N
A P P E N D I X
 TO THE
History of Birds.

Containing

Such Birds as we suspect for fabulous, or such as are too briefly and unaccurately described to give us a full and sufficient knowledge of them, taken out of Franc. Hernandez especially.

Of the footless Sparrow.



His Bird is deservedly famous for its notable folly. It is not afraid of them that go to catch it, but sits still with a great deal of confidence till they lay their hands upon it, not offering to fly away, but only seeming to wonder what they intend to do. It is a Sea-fowl, and feeds upon fish. It hath the cry of a Jay; is of the bigness of a Mag-pie, of the shape and colour of the Gull, excepting that part of the forehead next the Bill, which is cinereous; whole-footed. Its Bill is three inches long, slender, round, and straight, only a little crooked near the tip: Its Legs and Feet (which are like those of other whole-footed Birds) black: Its Pupil is also black, but the membrane about the Pupil grey.

The tameness of the Birds of the Island Cerne is well known and celebrated. They alight upon the heads and shoulders of the Mariners that go ashore there, as it were upon trees, and suffer themselves without difficulty to be caught, coming readily to hand.

Of the Bird called Daie laying great Eggs.

The Bird called *Daie* is remarkable for the extraordinary and unusual nature or manner of its Eggs and Young. It is not bigger than a Pigeon, and tolerable good meat. For its Nest it scrapes a hole with its Feet and Tail in sandy grounds four spans deep; where when the rains fall it lays its Eggs, (which are bigger than Goose-eggs, almost as broad as ones fit, called by the Natives *Tapuu*) fifty or more in number, being of a gross and fat substance, without any Yolk in them, which roasted or boiled are good wholesome food, but fried *tough, bad, and of hard concoction.

* Coarse.

It is very strange [more strange I dare say than true] that so little a Bird should lay so great Eggs, and so many together, and in such deep vaults under ground, and that being there hidden they should be hatched without being ever sitten upon or cherished by the old ones, and that the Young once hatched should of themselves presently fly away.

I dare boldly say that this History is altogether false and fabulous. For though some Birds lay very great Eggs (as for example, Puffins, Guillemots, Razor-bills, &c.) some also build in holes under ground. Yet such lay but one Egg, not a great many before they sit. Neither do I think that there is any Bird in the world whose Eggs want the white.

Of the Guitquit that sits upon Ravens.

A Little body contains a great spirit and courage. There is a very small Bird (*Guitquit* the Indians call it) like the *Wren*, of a green colour, and sweet-tasted flesh. Such is the wonderful force of nature, that this Bird, as little as it is, and

D d d next

next to nothing, dares set upon and pursue whole flocks of *Ravens*, and forces them to hide themselves from it, and to take shelter among the Reeds.

I suppose that this story is feigned in imitation of what the Ancients have delivered concerning the Wren, viz. that with great courage [indeed fool-hardiness] she dares enter combat with the Eagle.

Of the Bird called Maia.

There is another sort of small Birds, especially in the Island *Cuba*, that fly in flocks, and waste the fields or plantations of Rice, (which grain grows abundantly, and is of much use in those Countries) called *Maia*, of a fulvous colour, its flesh pleasant, of easy concoction, and yielding a plentiful nourishment: Whose Stomach, (or rather *Craw*) and first receptacle of nourishment, is on the back side of the Neck: A wonderful and singular thing, of which there is not another instance in nature.

Of the Yayauhquitol or long-tail'd Bird.

There proceed from the end of the Tail [or Rump] of this Bird two feathers longer than the rest, below naked, without any lateral hair-like bodies, abundantly at the tips with blue and black Vanes. The body of the Bird is as big as a *Starer*, particoloured of blue, green, fulvous, and grey. *Peregrine this may be the same Bird which Marggrave hath accurately described under the title of Guira-guainumbi.*

Of another sort of Xochitenacatl, that is the Toucan or Brasilian Pie.

This Bird breeds and feeds on the shores of the Southern *America*, being of the bigness of a *Pigeon*, with a thick, sharp-pointed, black Bill, black Eyes, and a yellow *Iris*. The Wings and Tail are particoloured of black and white, a black list reaching from the Bill to the very end of the Breast, yet is there some yellow about the forepart of the Wings. The rest of the body generally is of a pale colour, excepting the Feet and Legs, which are brown, and the Claws, which from white incline somewhat to a pale yellow. It lives about flowering trees, feeding upon the honey it sucks out of their flowers. It breeds its Young in the Spring, and is much esteemed by the *Tototpecenses*, in whose Country it is very frequent.

Of the Bird called Momot.

This abides and delights in hot Countries. It is of the bigness of a *Dove*; hath scarlet-coloured Eyes, with a black Pupil: A crooked, blackish Bill, almost three inches long, sharp-pointed, the nether Chap shorter, the upper serrate: A blue Head, like a *Peacock*; brown Feet, the rest of the body green. What is rare and extraordinary in this Bird is, that it hath in its Tail one quill longer than the rest, and which is feathered only at the end, [*This is, I dare say, more strange than true: For the Tails of all Birds I ever yet saw have their feathers growing by pairs, that is, two of a sort, on each side one,*] and that so beautiful a Bird should be of no use, but for its feathers.

Of the Vermineous Bird or Tuputa.

This Bird seems to be of a strange nature, as we gather from its note, from which it took its name *Tuputa*; but it is, and deservedly, more famous for its singular putrefaction. For while it is living it is wholly stuffed with worms instead of flesh, all its members and muscles being full of them. Nothing of flesh besides these and the skin. Yet they do not eat or make their way through the skin, which is adorned with thick-set feathers. It abides among Sedge, and in grassie places. For shape of body it is like a *Pheasant*, but lesser.

What is here delivered concerning this Bird, if understood generally of all the individuals of this sort we are so confident to be false, that we think it needless to spend time in the confuting of it. This however we thought fit to signify to the Reader, lest he should imagine we gave any credit to the story.

Of

Of the Mozambick Hens.

The feathers, flesh and bones of these Hens are so black that being boil'd one would think they had been sodden in ink; yet are they thought to be very flavoury, and far better than those of other Hens. *This history is as true as the precedent.*

Of the laughing Bird or Quapachtototl.

Mirth is often unsecure. *Quapachtototl* or the fulvous Bird, imitates humane laughter, and yet is dreaded and hated by the *Indians* as inauspicious and ominous, fore-boding some evil or mischief. The body [from Bill to Tail] is eight inches long; and the Tail as much. The Bill from blue inclines to black, being pretty long and crooked. The circle about the Pupil of the Eye is white: The Breast cinereous: The Belly from thence to the Tail black. The Tail of a dark fulvous: But the Wings, Neck, and Head fulvous, whence it got its name among the *Indians*. They say it is pleasant and wholesome meat.

Of the Water-Quail or Acolin.

A Certain brown Bird of the Lake of *Mexico* is called *Acolin*, because it is of the bigness of a *Quail*. It hath a long Bill, bending downward; and long Legs. It runs very swiftly near the top of the water: And seldom or never flies. It feeds upon fish: And it self is made food by man.

Of the Cornet Ducks.

There is a certain sort of *Duck*; in *Asia*, which one may not undeservedly reckon among *Cornets* or Horn-winders: Their voice doth so nearly resemble the found of a horn such as Post-boys use. This same Bird though it be feeble and weak, yet is it bold and stout, and the *Turks* have a persuasion that it frightens and drives away evil spirits. Certes it is so constantly desirous of liberty, that though it be kept up and fed three whole years in a Cage, if it get an opportunity of escaping, it will prefer its liberty before its ease, and fly away to its natural and usual haunts and manner of living.

Of Birds that cannot stand.

The *Indians* call a sort of *Duck* with a black Bill, indifferently broad; tho' whole body almost being white, black, and grey, but about the Head and Neck purple, white, blue, green, and changeable according as it variously reflects the Sunbeams, like the Heliotrope stone, or a *Peacock's* head, *Yxtalazon Tayanqui*, or the Bird of a particoloured Head. Its Legs and Feet are red: Its food like that of other marsh-birds. It is a Bird of passage, coming to the Lake of *Mexico* at a certain season. We must not omit to tell you, that this Bird like the *Acitli* or *Water-Hare* cannot walk but only swim; the Legs of both growing in like manner at the very end of their bodies.

Of the broad-bill'd Bird or Tempatlahoac.

There is a certain sort of wild *Duck* among the *Indians*, called by them *Tempatlahoac*, [the *Spaniards*, Natives of *America*, call it a *Smallow*] of the bigness of a tame *Duck*, and therefore called among the *Indians* by the same name. It hath abroad, long Bill, all over black; A white Tongue: Pale-red Legs and Feet: Its Head and Neck shine with green, purple and black colours, like those of a *Peacock*, or the heliotrope stone. Its Eyes are black, and *Iris* pale: Its Breast white: But the rest of the body beneath fulvous, and adorned with two white spots on both sides near the Tail; above beautified with certain femicircles, the circumference of which from white tended to brown, the middle or inner part from black to a shining green. The Wings at the setting on [or beginning] are blue, next white, and then lastly of a shining green. Yet their extremes are on one side fulvous, on the other side

D d d 2

shining

shining and green. The circumference of the Tail both above and beneath is white, else it is black underneath, and of a Peacock colour above. This also is a stranger coming from some other Country to the Lake of Mexico, and its flesh is such kind of meat as that of other marsh Birds.

Of the crested Eagle.

This is a beautiful kind of Eagle, and as it were crowned like a Kingly Bird; the Indians call it *Tzquanahltli*. Its Bill is yellow at the root, then black; Its Talons black; Its Feet of a pale colour: Its Legs and Belly mingled of black and white: Its Neck fulvous; its Back and Tail black and brown: Its crest or crown black. It is about as big as a common Ram; and is as stout and hardy as the fiercest creatures, so that being reclaimed and kept tame upon a slight provocation, it will assault and fly upon even men themselves. Yet is it very tame and gentle, and becomes as fit and serviceable for hawking as other Hawks, of which it is a kind.

Of the Bird having three tunes, or notes.

A Small Bird that sings very sweetly is found in *Hispaniola*. It sings in three several voices or notes, varying its tune with almost indivisible modulations: from a sharp note presently falling down to others, that it seems to utter them all together, and with one breath to form several notes, as if they proceeded from three throats. An anonymous manuscript Author, who affirms that himself hath heard, thinks that there is no bird in the World sings more pleasantly, yea, that it clearly excels the *Nightingale* in the almost inexplicable sweetness of its accents. This Bird he saith he saw not, only heard it: But from the testimony of others he declares that it is very beautiful, and adorned with wonderful variety of lovely colours.

Of the Water-Sparrow.

A *Cototloquichitl* or the Water-Sparrow, the Cock sings pertinaciously without intermission. From Sun-rising to Sun-setting it chirps and cries fitly with a noise like the squeaking of Mice. It gratifies the Palate more than the Ear. It sits upon Rushes and Seggs, and among them it builds. For bigness and shape it resembles a Sparrow, yet its Bill is black; its Legs and Feet fulvous. The lower or under-side of the body is for the most part white: The rest fulvous, varied with a kind of white and black. It is found in the coasts of Mexico.

This Bird is not much unlike that we have intitled the *Reed-Sparrow*.

Of the hoarse Bird.

The ludicrous motion and contraction of its Neck at pleasure hath ennobled the *Acaca cabucatl*, or water bird that cries hoarsely: For the hoarseness of its voice hath given it its name. It is of that kind of *Halecyons* [King-fishers] which our Country-men [Spaniards] are wont to call *Martinet Pescador*, which naturally frequents Rivers and Streams of water to get its food. It is a little less than a wild Duck, having its Bill and Neck of a span long: Its Bill is about three fingers breadth long, of a moderate thickness, ending in a sharp point, and very fit to strike and peck withal, black above, white underneath, and pale about the sides. The Pupil of the Eye is black, the Iris next the Pupil red, then pale, and at last white. From the Eyes to the rife of the Bill proceeds a * line [*fascia*] of a pale green. Its Legs and Feet (which are cloven into toes, are green on the out-side, on the inside incline to paleness. The colour of the whole body is for the most part white, with fulvous feathers intermixt: But the upper side inclines more to brown, the under-side is whiter. The Wings underneath are grey; above about the extremes black, next from fulvous inclining to red, then from fulvous declining to pale, and lastly near the Back fulvous. It feeds and lives upon fishes, very easily becomes tame, and sings not unpleasantly; but must be carefully and tenderly fed with worms, and water-insects. You may also for want of other more natural food give its flesh to eat. It yields a gross nourishment, not unlike to that which wild Ducks afford. It is native of the Country of Mexico, and breeds in the Spring among the Rushes. Whereas the Neck, in comparison with the rest of its body, is very long, it is wonderful strange into what a shortness it can contract

* Or Swath.

contract it; which it is commonly wont to do. Its Tail is little and black, shewing something of splendour, and widening into a greater breadth. * They call it by its Country-name *Tolcomilli*. This Bird would be altogether like its fellow, were not its Bill black above; and red underneath, as also its Legs and Feet: And the colour of its whole body fulvous and black promiscuously.

Of the Hoatzin.

Itsue in Phycic recommends the bird *Hoatzin*, that utters a sound like its name. It is almost as big as a Turkey; hath a crooked Bill, a white Breast inclining to yellow: Wings and Tail spotted at intervals of an inch distance: Of a white and pale colour; the Back and upper part of the Neck fulvous, but both inclining to brown; as do also the temples of the Head as far as the Bill and Eyes. It hath black Claws, and dusky Legs. It hath a crest made up of feathers from white inclining to a pale colour, but their back-side black. It feeds upon Snakes. It hath a great voice, representing a kind of howling. It appears in the Autumn, and is by the Natives accounted an unlucky bird. Its bones allwage the pain of any part of mans body by launcing. The smook or suffumigation of its feathers brings them to their right mind who grew distracted by any sickness. The ashes of its feathers taken inwardly cure the French Pox, giving marvellous help. It lives in hot Countries, as is Yantepec, and very often is found sitting upon trees near Rivers.

Of the dry Bird or Hoatzin.

Neither is the *Hoatzin* or *Tobadli*, that is, the dry bird, feeding about the Lake of Mexico, a contemptible spectacle. From the point of the Bill to the end of the Tail it is three spans long, and of the bigness of a common Hen. Its Legs are a foot long: Its Bill is five inches long, [perchance he may mean 1; of an inch, the words are, *Cum uncia trium*,] and an inch thick, black above, pale on the sides, and underneath black and brown. Its Eyes are great; its Iris yellow, and Eye-lids red. The crown of the Head is covered with black feathers, and adorned with a crest in like manner black. Its Neck, Breast, Belly, and whole body are white, but its Tail ash-coloured, as are also its Wings above, for underneath they are whiter. The upper parts of its Wings shine with a kind of greenness. The Back though it be covered with white Plumage [or down] yet is wont to be invested with black feathers, inclining to a shining green. The Feet which are cloven into Toes, and also the Legs are pale. Its Head is compassed with a white wreath or ring proceeding from the rife of the Bill to the Eyes. It is a stranger to the Lake of Mexico, coming from some other place; and is called by Spaniards Natives *Martinet pescador*, from its catching of fish, upon which it feeds. It breeds among the Reeds; it bites shrewdly; and hath a great fat voice.

Of the Wind-bird, Heatototl.

Heatototl or the Wind-bird is also worthy to be beheld. It is adorned with a great orbicular crest, standing up like a crown, and a little whitish. Its Breast from brown inclines to cinereous: Its Belly is white, and Feet flat: Its Legs and the feathers growing about them fulvous. Its Tail is round underneath varied with white and a sooty colour, but above brown: Its Wings underneath are white, ash-coloured and sooty, above black, yet with some white feathers interperfed. In other respects it is of the same nature with other Water-fowl, and like to the other *Heatototl*, which is something less than a tame Duck, with a black, slender round Bill, and near the end wreathen: Its feathers underneath white, but above near the Thighs fulvous. Its Wings underneath are ash-colour, but above brown, black, and white. Its Head is black and crested; but from the hinder part of the Head black streaks proceed on both sides to the Eyes, which are black, with a yellow Iris. In other things they are like to birds frequenting Fens and Marshes.

Of Achalalaçtli and Amalozque, birds with rings about their necks.

Its silver-coloured ring adorns the Neck of *Achalalaçtli*, or the Bird that tosses and throws fishes about. Some call it *Michalalaçtli*. It is of the bigness and shape of a Dove, hath a black, sharp Bill, three inches long, and thick for the proportion of its body. Its Head is adorned with a long crest, from blue inclining to black. Its Belly is covered with white feathers, and its Neck beautified with a white ring. Its Wings underneath are white, but their ends brown, spotted with white: Above, like the rest of the body, blue, but their extreme parts black, and spotted every where with white specks. Its Tail is partly black, partly blue; but at intervals also varied with white spots. Its Legs are red; its Feet divided into Toes, ending in black Claws: Its Eyes black, and *Irides* white. It is a *stranger to this Country of *Mexico*, and frequents Rivers and Fountains, feeding upon little fish and water Insects. It is edible, but of like taste and nourishment with other Fen and Marsh birds.

* Not native of it, being a bird of pale-fige.

Nor is the *Amalozque* or red-neck bird of less beauty. It is also a Marsh-bird, of the bigness of our common *Turtle-dove*: Its Legs and Feet (which are divided into Toes) being of a delayed red, [or white dashed with red:] Its Claws black: Its Bill of a moderate length, slender, and black: Its Eyes black, and *Irides* red. The lower parts of the Breast, Belly, and Wings are white: But its Tail, which is of a moderate bigness, is sprinkled with fulvous and black: But, what is most remarkable, two black collars, distant by the breadth of ones little finger, encompass the Neck and Breast; the foremost whereof incircles it round, the hindmost fails and disappears in the upper part, [or above the Neck.] On both sides are two white spots of equal bigness, above the Eye toward the Neck, and reaching almost to it. The upper part of the body and also the tail are of a white, black, and fulvous colour. But the Wings above fulvous and brown. This Bird is native of the Lake of *Mexico*, breeding and bringing up its young there in the Spring-time. Its flesh is eaten, and affords like nourishment with that of other Water-fowl. It feeds upon little fishes, Gnats, and other Water-Insects. It hath a louder and stronger cry than lutes to the proportion of its body: yet is it not to be numbred among the clamorous birds.

The healing Wood-pecker, or Tlequecholtototl.

This *Tlequecholtototl* or Bird with a Head like the *Spoon-bill* [*Plataca*] is bigger than a *Blackbird*, hath a long black Bill, but the nether Chap much the shorter. The crown of the Head, and almost the whole Neck above is red, the lower parts being altogether cinereous. The Wings and Back are black, varied with transverse white lines. It lives in the fields of *Pavatlán*, in the Province of *Totancapá*. It is a kind of *Wood-pecker*, that perforates trees, the red feathers of whose Head being applied and glued to the Head are reported to cure the Head-ach: Whether they came to be of that opinion, because they grow on the birds Head, or found it to be so by some experiment.

Of the Wood-pecker that breeds in the time when the rains fall.

Qutotoni is a kind of *Woodpecker* of the bigness of a *Hoopoe*, varied with a black and brown colour. Its Bill, wherewith it perforates trees, is three inches long, strong and white, the nether Chap the shorter. Its Head is small, covered with a red plumage, adorned also with a red crest, three inches long, and black at top. On each side the Neck goes down a white stroke [*fascia*] as low as the breast. Its Legs and feet are of a livid or lead-colour. It lives not far from the South Sea: Builds upon high trees: Feeds upon *Cicade*, or *Tlaolli*, Worms, and other Insects. It breeds in the time that the rains fall, that is from the month of *May* to *September*. It is neither good to eat, nor useful for any thing else that I have heard of.

Of the Queen of the Auræ.

Ozcacoançtli the *Indians* call a Bird, which they say is the Queen of those fowl the *Mexicans* call *Auræ*. It doth not less deserve that name from its constancy or firmness against all the force of blasts, and impulse of winds. It approaches in bigness

bigness to the *Glossian Eagles*. its whole body besides the Neck and those parts which are near the Breast is from a black purple, fulvous and dark or sad-coloured. Its Wings underneath about their rise black, else cinereous; but above mixed of fulvous and black, and something inclining to purple. Its Legs are red, and Claws hooked. The extremes of the Bill (which one would think were those of a *Parrot*, they are so undiscernably like) are white, the rest of the Bill of a sanguine tincture. The Nostrils are large; the Eyes black, but *Iris* fulvous; the eye-lids red: The forehead died with a sanguine colour, and frowning or wrinkling, which wrinkles it doth sometimes explicate and smooth. In which particular, and also in some thin, scattered hairs, frizzled, not unlike *Blackmores* hairs, it seems to resemble the *Turkey*. It hath a Tail like an *Eagle*, grey beneath but black above. It feeds upon Snakes, Mice, and Lizzards that it catcheth; but especially upon Carrion, or dead beasts, and mans dung. It soars aloft, flying high with its Wings spread, and almost without intermission. It is native of the Province of *Mexico*, and breeds in the Spring. With an incredible force it resists the Winds, bearing up stiffly against them, and persisting in the same place immovable, let them blow never so boisterously. Its flesh is unuseful for food, not being tasted of by any man, that I have yet known of, but only for Physic. I hear that the *Indians* do heal Ulcers by applying to them the feathers of this bird outwardly, and giving the Patient its flesh boiled to take inwardly for his food during the distemper: Which they say also is a present remedy for the French Pox.

Of the Garagay.

Garagay is said to be a Bird of prey, of the bigness of a *Kite*: Having its Head and the ends of its Wings white: Being of short flight, a great destroyer of *Crocodiles* and *Tortoisers* Eggs. It smells them out though hidden under the sand in the banks of Rivers, scrapes them up and devours them. It is a solitary bird, save that the *Auræ* follow it that they may partake of its prey: For they cannot scrape in the ground to dig up Eggs.

Of the Hoaston.

The Female of this Bird, called *Hoaston*, is a little bigger than the Male called *Hoactli*, akin to, or like the common *Heron*; white on the Neck and Belly, with brown feathers intermixt. The rest of the body is brown, set here and there with white feathers. Its Eyes great, and black, with a pale *Iris*.

Of the Scarlet-feathered Indian Bird.

The lustre of its Wings commends the *Acolchichi* or red-shouldered bird, and obtained for it of the *Spaniards* an honourable name, who call these Birds *Comendadores*, because they resemble the badge or cognizance of those Knights, who wear on their side the like shining red. They seem to be a sort of *Stares*, which the *Spaniards* call *Tordos*, agreeing with them in bigness, colour, and shape, and every where companying with them; although their shoulders at first appear fulvous, inclining to red, and as they grow older are wholly changed into a *fulvous colour. Being kept in Cages they learn to imitate humane speech, and prattle very pleasantly. They eat any thing you offer them, but especially Bread and *Indian* Wheat. You may find these Birds both in hot and cold Countries: By their numerous flocks they are very troublesome to people living in Towns, especially in hot and maritime Countries. They yield a bad and unpalatable juice; and build in trees not far from Towns and the commerce of men, wasting and destroying the corn-fields where they light. They sing and play whether they be shut up in Cages, or suffered to walk freely up and down the house.

Of fair-feathered Birds.

Its feathers have made the *Quetzalototl* more precious than gold, and therefore it is called the *bird of feathers*. It hath a crest, and is in good part adorned with Peacocks feathers, of the bigness of a *Pie* or *Pigeon*, having a crooked yellow Bill, and Feet something yellow. The Tail is composed of very long feathers, of a shining green,

* I suppose here is the mistake in the Copy or Author, and that it should be red.

green, and of a Peacock colour, like for shape to the leaves of *Flower-de-luce*; and covered above with other black ones, but beneath and where they touch the Peacock-coloured or purple ones, (which are in the middle) inclining to green, as if nature took care of the beauty of the middle feathers. The Crest consists of shining and very beautiful feathers. The Breast and Neck underneath are covered with a red and shining Plumage; and with a purple [*pavonina*] as is also the Back and the sides under the Wings, and the Belly between the Legs; but the feathers in this last place are of a fainter colour, slender, and soft. The feathers of the Wings are very long, tintured with a dilute green, and ending in sharp points. The feathers growing on the shoulders are green, but black underneath; but those between the Wings are something crooked, and of the colour of the * Claws. The feathers of this Bird are highly esteemed among the *Indians*, and preferred even before Gold it self; the longer ones for crests, and other ornaments both of the head and whole body, both for War and Peace: But the rest for setting in feather-works, and composing the figures of Saints and other things; which they are so skilful in doing, as not to fall short of the most artificial Pictures drawn in colours. For this purpose they also make use of, and mingle and weave in together with these the feathers of the *humming bird*. These Birds live in the Province of *Tecolotlan* beyond *Quauhquemallan* towards *Honduras*, where great care is taken that no man kill them: Only it is lawful to pluck off their feathers, and so let them go naked; yet not for all men indifferently, but only for the Lords and Proprietors of them; for they descend to the Heirs as rich possessions. *Fr. Hernandez* in some pretermitted annotations adds concerning the manner of taking these Birds some things worth the knowing. The Fowlers (saith he) betake themselves to the Mountains, and there hiding themselves in small Cottages, scatter up and down boild *Indian* Wheat, and prick down in the ground many rods besmeared with Birdlime, wherewith the Birds intangled become their prey. They fly in flocks among trees, on which they are wont to sit, making no unpleasant noise with their whistling and singing in concert. They have by the instinct of nature such knowledge of their riches, that once sticking to the Birdlime, they remain still and quiet, not struggling at all, that they may not mar or injure their feathers. The beauty whereof they are so in love with, that they chuse rather to be taken and killed, than by endeavouring to get their liberty do any thing that may deface or prejudice them. They are said to pick holes in trees, and therein to build and breed up their Young. They feed upon Worms, and certain wild * *Pineæ*, of that sort which the *Mexicans* are wont to call *Matzali*. They love the open air, nor hath it been yet found, that ever they would be kept tame, or brought up in houses. They make a noise not much unlike *Parrots*: But they have a cheerful and pleasant whistle, and they sing thrice a day, to wit, in the Morning, at Noon, and about Sun-set.

Next to the *Quetzalototl* the *Turquoise* is most esteemed. It is a small bird, almost as big as a *Dove*, clothed with feathers of many colours, with which the Natives compose Images and Figures of wonderful subtilty and curiosity: For from this artifice they are become known and famous all the world over. These they use and make shew of on Feast days, in War, in their Temples, and public Merriments and Dancings. Its Bill is short, crooked, and pale; its Head and Neck like a *Dove*, but covered with green and shining feathers. Its Breast and Belly are red, excepting that part which is next the Tail: For that is dyed with blue and white promiscuously. Its Tail green above, and black underneath: Its Wings partly white, and partly black. The *Iris* of its Eyes is yellow, but inclining to scarlet: The Legs and Feet cinereous. It lives in hot Countries near the Southern Ocean. It is nourished up in Cages, and fed with fruits. It is as beautiful and lovely a Bird as any is, but neither doth it sing, nor is its flesh (that I know of) good.

Totoquial also (as *Antonius Herrera* writes) is a lesser-sized bird than a *Pigeon*, all over green. The feathers of its Tail are very long, highly prized, and a special commodity used in commerce. It was a capital crime to kill this bird; wherefore they only plucked it, and let it go.

Of the *Thrushes* of *Chiappa* and *Artificer-Sparrows*.

There is a sort of *Thrushes* found in *Chiappa*, which they call *Artificer-Sparrows*. They are black only on the Breast, and red on the Head. They feed only upon Acorns. With their Bill they perforate the barks of Pine-trees; and in each hole hily accommodate or stick in an acorn, so that by the hand it cannot be plucked out; and to very elegantly

* The word is *anguis*, it may be the Author may mean humane nails.

* I suppose this word is mistaken, for what *pinea* signifies mean I know not.

elegantly set the Pine-tree round with Acorns. Then sticking to the bark with their Feet, they strike the Acorn with their Bill, and devour the kernel.

Of the long bird or *Hoitlallotl*.

Hoitlallotl or the long bird is more taken notice of for its running than for its feathers. From the tip of the Bill to the end of the Tail (which also is a span long) it is extended nine inches. Its Bill is black above, cinereous underneath, three inches long, and moderately thick. Its Tail is green, but with a purplish splendour. The feathers of the whole body from white tend to fulvous, but toward the Tail from black to the same colour. Yet the feathers on the upper side of the body are black, sprinkled with white spots. It flies near the ground, and makes but short flights; but runs so swiftly that it far exceeds the speed of the fleetest horses. It lives in hot Countries, and yields no very desirable nourishment.

Of *Indian* Quails.

Those of *New Spain* call Quails *Colin*. These are like our Country Quails, though they be without doubt to be referred to the kind of *Partridges*. There are found many sorts of them in *New Spain*: Some brown and crested, which they call *Quahzonzocolin*; of a moderate bigness, and a remarkable, but mournful cry: Others brown in like manner, but without crests, and a little less: Others, the biggest of all, of a fulvous colour, but their Heads varied with white and black, the ends [*extremis*] of their Wings and Back white, their Bill and Feet black. They are all (as I said) like to the *Spanish* Quails, very good and pleasant meat, provided you kill them two or three days before they be roasted and served up. Physicians allow sick persons to eat of their flesh: Neither is there any Fowl among the *Indians*, next to tame Poultry, whose flesh is to be preferred before it, either for wholesomeness or taste. They have a tune like our Quail, and some a more pleasant one than others. They are kept in Coops, and fed either with common or *Indian* Wheat, and are common in many parts of this Country.

The same Author [*Fr. Hernandez*] of the *Coyolcozque* or sounding Quail in another place writes thus. It is one among many other sorts of *Colin* or *Mexican* Quails, of which we shall speak singly: like to our Quails for bigness, note, feeding, flight, and conditions, but of a different colour; above mingled of fulvous and white, underneath only fulvous; yet the crown of the Head and the Neck are set with black and white feathers; which make seams or strokes on each side from the Neck to both Eyes. The Eyes are black, and the Legs fulvous. It is native of this Country, and frequent in the open fields, as is the common Quail, and yields a like nourishment, coming next to the *Spanish* Partridge, of which it is a sort.

Coloniculic or the Quail Image is also a sort of Quail varied with white, black, and scarlet Plumes; above rather produced in lines than round spots, underneath disposed rather into thick-set spots than lines. Its Feet and Legs are blue: But for its note, bigness, conditions, and all other qualities, it is altogether like the precedent.

Acolin is of the bigness of a *Stare*, hath pale-green Legs and Feet, divided into four pretty long Toes. Its Bill is yellow, and of the longest for the proportion of its body, slender also, and sharp-pointed: Its Eyes black, its *Irides* fulvous, and Head small. The under side of the body is white, the sides spotted with brown: The upper surface of the body and the Tail (which is short) are fulvous, but spotted with black; lines of white encircling all the feathers, sprinkled or powdered sometimes with specks of the same colour. It frequents Lakes, and hath a fishy taste, yet is it no unpleasant meat. It feeds usually upon Worms, Flies, and other insects flying about the Fens. It breeds in the Lake of *Mexico*. Its Head glitters with a wonderful variety of colours, a black line dividing it in the middle, and others of a grey or ash-colour distinguishing the sides: The exterior corners being pointed with small white spots. The Neck and Breast are grey [*cinerea*], the rest of the Plumage from fulvous rather incline to green.

Of the Snow-bird or Cooan.

IT is a little bigger than a *Thrush*: Esteemed of for imitation of humane speech: About the Breast, Belly, and setting on of the Wings fulvous; near the Tail are grey feathers mingled with the fulvous. The ends of the Wings and the Tail itself underneath are cinereous: But above, all the body is of a dark brown. The Bill, (which is small and slender) and the Legs are fulvous: The Chin is white, yet having some black feathers intermixt. It imitates humane speech, mocking, and as it were deriding those that pass by: Whom yet if it may it will follow.

Of the Cenotzqui or Snow-calling bird.

IT deserves its name, because before it snows it cries, afterwards is silent. It is remarkable for variety of colours: Having a fulvous Breast, pale Legs, black Claws, a Belly spotted with black and white. Under the Wings it is white and ash-coloured; above fulvous, black, and then cinereous spotted with black, and near the ends or tips speckled with white. Its Tail underneath is black and white, above fulvous, spotted with black. Its Head is black, encircled with a wreath of grey: Its Bill small, grey both above and beneath, but above near its rise encompassed with a yellow line. Its Eyes are black, and Eye-lids pale. It endures any kind of air or weather, but abides in mountainous places, and in the Spring-time breeds and brings up its Young. It so turns its Head up and down, winding its Neck every way, that abiding immovable in the same site it can look round about it.

There is also another sort of this Bird differing in some varieties of colour, having its Head fulvous and grey, its Neck partly black, and partly white, which some call *Laceto*.

Of the Bird called Pauxi.

I Take this to be the same with the *Mitu* of *Margravins*, and with the Mountain Bird or *Tepetototl* above described. The whole difference is in the Crest, instead whereof this Bird hath a certain tumour at the root of its Beak, of the figure of a Pear, and the hardness of a stone; of a blue colour like that of the *Turcois* Stone. In another place he saith, that this tumour called a stone, though it be not over-hard, is like an Egg or bigger, of a rusty colour.

Of Piciciti.

THE small Bird called *Piciciti* appears after showers: It is noted for the obscurity of its original. The *Tetzcoqueses* do not yet know where it breeds. It is a mute Bird, brought up in the house it soon dies and decays. It gratifies both the Palace and Stomach. It is all over ash-coloured, except the Head and Neck, which are both black: Only a white spot encompasses its black Eyes.

Of the *Polyglott Bird.

I Saw, heard, and admired a small Bird brought to *Madrid*, the Queen of all singing Birds, that could command any voice or tune. The Indians from its multiplicity of notes call it *Cencontlatotli* or four hundred tongues. It is not bigger than a *Starling*, white underneath, brown above, with some black and white feathers intermixt; especially next the Tail, and about the Head which is encircled with the likeness of a silver crown. It is kept in Cages to delight the ear, and for a natural rarity or rather wonder. It excels all Birds in sweetness and variety of Song, and perfect command of its voice; imitating the note of any sort of Bird whatsoever, and excelling its exemplar. It goes far beyond the *Nightingale*. I myself kept it a long time, it is content with any meat; it loves hot Countries, but can abide temperate.

Tzampun is like to this. Some suspect that it is only the Hen of the same sort, they being equal in bigness, singing alike, and agreeing in shape, saving that the feathers underneath are white, cinereous, and black, those above sad-coloured, black and white.

* Of many notes.

Of the singing Night-bird.

Chicnatli or the Night-bird is of the bigness of our *Woodcock*, hath a long, slender, black Bill, and crooked yellow tams near each Eye. The lower parts of the body are of a pale colour, with a few black feathers intermixt about the Neck. The Eyes are black, with yellow *Irides*. The rest of the body is of a mingled colour of fulvous, brown, and grey. It lives in the Mountains, and flies low: Being kept in a Cage it prattles or chatters prettily. It is easily brought up, for it is wont to feed upon bread made of *Tlaotli*, Worms, Gnats, and other Insects. It is taken both in hot and cold Countries; it feeds fat, and affords no contemptible nourishment. Some there are that call it *Chiquatototl* from the Owl, being a Bird not less Augural and ominous than that.

Of the Xomoti.

WE owe the protection and coverture of our nakedness not to Sheep and Quadrupeds only; for the Indians weave the feathers of this Bird into their Garments. It is whole-footed, hath its Back and Wings above black, its Breast brown. When it is angry it ruffles up the feathers upon its Head like a Crest.

Of the Rabihorcado.

THIS Bird divides its forked Tail into two parts, sometimes opening, sometimes shutting or drawing them together like a Tailors Sheers: Therefore it is called *Rabihorcado*, and by the Portuguese, *Raboforcado*.

An account of some Birds of the Ferroc or Ferroyer Islands, out of Hoiers Epistle to Cluf.

THE Birds of the first and second Classes are inscribed already into this work in their proper places.

In the third Class or rank (saith the Author) I place three Species different in shape, but in this quality very near of kin that they presage storms and tempests, and abide only far out at Sea. The biggest of these is much about the bigness of an ordinary Puller, [or middle-sized Hen,] of the shape of a *Falcon*. It is commonly, and not improperly, called *Hastbert*, i.e. The Sea-horse. It is all over of an ash-colour, and every where spotted with white; it hath a crooked Beak like a *Falcon*, but shorter. At the sight thereof the Fishermen are horribly afraid, as they are also at the appearance of the two following, and make to the Shoar as fast as they can, being sure that there is a dangerous tempest at hand.

The second, called *Stormfreck*, is a little bigger than a *Sparrow*. This also is all grey, but without spots, having a very slender Bill. You might with better reason term this *Pegafus* than the former: For that you shall to admiration see it with incredible velocity run upon the very Waves, crossing of them as swift as the Wind, being carried on like a storm, as its name imports. If flocks of these draw near to any Vessels at Sea; experienced Mariners know they must presently lower their Sails. This Bird seems to have some affinity with that which *Ovidius* mentions in his fourteenth Book of the natural and general History of the Indies, about the beginning of the first Chapter, telling us, that the Mariners call it *Patinas*: It being of equal velocity in flying even in a troubled and tempestuous Sea, so that one would think it ran with a swift course over the tops of the Waves.

The third Species named *Burnfiard*, is equal to a *Sparrow*, white under the Breast, with the Neck and Back black: Its Beak is also black, and somewhat broad: Its Feet red: This is as swift in swimming as the *Stormfreck* in running. Where these three kinds breed their Young is not known. Whence, in my opinion, among all that we have enumerated they seem to come nearest to the description of the *Haleyon*; though in colour they do not altogether agree with *Plinius* description.

5. In the fifth rank remain to be described two different sorts of wild Geese; the former whereof, called *Helsingnaas*, hath a black Head and Neck encompassed with a white ring, a white Breast, grey Wings, a blue Back, and red Feet. In bigness it answers to a Duck: The other sort [*Erangas*] is a little less than a wild Goose. Its Head is grey: Its Neck compassed with a circle of red: Its Breast grey, in like

manner its Wings and Neck: Its Feet red. These kinds of *Geese* are very rarely seen in the *Ferroyer* Islands, nor do they breed there. Whence they come, and whither they go no man knows. But the Inhabitants have a superstitious conceit, grounded upon long experience, that when they do appear they portend a change of Magistracy or Government. Beside these here is also plenty of common *wild Geese*.

Geshiers Wood-Crow. Aldrev. lib. 19. cap. 57.

Our *Wood-crow* is of the bigness of a Hen, black all the body over, if you behold it at a distance. But if you view it near hand, especially in the Sun, the black seemsto be mingled with green. Its Feet are almost like a Hens, but longer: Its Toes divided: Its Tail not long. It hath a Crest hanging down backwards from the Head, which I know not whether it be in all Birds of this sort, and always. Its Bill is red, long, and fit to thrust into the narrow chinks and holes of the Earth, Trees, Walls, and Rocks, to fetch out Grubs and Insects lurking there, upon which it feeds. Its Legs are long, and of a dark red. I hear that it feeds upon Grasshoppers, Crickets, little Fishes, and Frogs. It builds for the most part in the high Walls of demolished or ruinous Towers, which are common in the mountainous parts of *Switzerland*. In the stomach of one dissected, besides other Insects I sometimes found very many of those which eat the roots of corn, especially *Miller*; the *French* call them *Cutillas*, our Countrymen [the *Germans*] *Tuaren*, from the site of their Feet, as I conjecture. They eat also those Grubs of which the *May-flies* are bred. They fly very high: They lay two or three Eggs. The first of all (as far as I know) fly away about the beginning of *June*, if I be not mistaken. Their Young taken out of the Nest before they can fly may easily be fed, and made so tame, as to fly out into the fields and return of their own accord. The young ones are commended for good meat, and counted a dainty: Their flesh is sweet, and their bones tender. Those that take them out of the Nests are wont to leave one in each, that they may the more willingly return the following year. They are called by our Country-men, *Wald-rapp*, that is *Wood-Crows*, because they are wont to live in woody, mountainous, and desert places: Where they build in Rocks, or old forsaken Towers: Wherefore also they are called *Steinrapp*, and elsewhere [in *Bavaria* and *Stiria*] *Clausfarapp*, from the Rocks, or Crags, and straits between Mountains, which the *Germans* call *Clausen*, that is, enclosed places, wherein they build their Nests.

Mr. *Willughby* suspects this Bird to be no other than the *Coracias* or *Pyrhocorax*: But if it be rightly described its bigness and the crest on its head forbid it.

A

A SUMMARY OF FALCONRY,

Collected out of several Authors.



Falconry is usually divided into two parts: The first concerning the reclaiming and managing of Hawks: The second concerning the diseases of Hawks, their signs, prevention, and cures. Which method I shall also observe.

In the first part I shall give 1. An Exposition of some words and terms of Art. 2. Some general observations. 3. I shall proceed to the managing and reclaiming of 1. Long-winged Hawks, viz. The *Falcon*, *Ger-falcon*, *Lanner*, *Merlin*, and *Hobby*. 2. Short-winged Hawks, viz. The *Goshawk*, and *Sparrow-hawk*.

CHAP. I.

Terms of Art used in Falconry explained.

B.

Bating, is endeavouring to fly off the Filt or Pearch to which the Hawk is tied: from the French word *Battre*.

Bathing needs no explication.

Bowling is when a Hawk drinks often, and seems to be continually thirsty.

A *Brancher*, Vide A *Ramage Hawk*.

C.

Crabbing is when Hawks, standing too near, fight one with another.

A *Creance* is a fine small long line of fine and even twined Packthread, which is fastned to the Hawks Leafe.

The *Cere* is that skin which covereth the base of a Hawks Bill, from the Latine word *Cera*, signifying Wax, because it is in most birds of prey of the colour of Bees Wax; The skin of the Legs and Feet, as far as it is bare of feathers, is also so called.

Check, or to kill *check* is when Crows, Rooks, Pies, or other Birds coming in the view of the Hawk, she forsaketh her natural flight to fly at them.

Casting is any thing you give your Hawk to cleanse her gorge with, whether it be Flannel, Thrums, Thistle down, Feathers, or the like. What ever you give them of this kind, over-night, or at any other time, it is the nature of these Birds to cast it up again the next morning, or after a convenient time, made up into a lump or pellet.

A *Cudge* is that on which the Falconers carry many Hawks together, when they bring them to sell.

To *Cope* a Hawk is to cut her Beak or Talons.

D.

Disclosed is newly hatcht.

Dropping is when a Hawk mutes directly downward, and jerketh it not long ways from her.

To

E.

TO *Endem* is when a Hawk digesteth her meat, not only putting it from her gorge, but cleansing her pannel.

An *Eyas* or *Nyas* Hawk is a Hawk taken out of the Nest, or brought away in the Nest.

The *Eyrie* is the Nest, or place where Hawks build and breed their Young.

G.

THe *Gorge* is that part of the Hawk which first receiveth the meat, called in other fowls the *Crop* or *Crop*.

Gurgiting is when a Hawk is stuft or suffocated with any thing, be it meat or ought else.

I.

THe *Ink*, whether it be of Partridge, Dove, or any other prey, is the Neck from the Head to the body.

Intermend is from the first exchange of a Hawks coat, or from her first mewing till she come to be a *white Hawk*.

Jesses are those short straps of leather, which are fastned to the Hawks Legs, and so to the Lease by Varvels, Anlets, or such like.

To *Imp* is to put a feather into Wings or Train, instead of one lost or broken: from the Latine *impono*.

L.

THe *Lease* is a small long thong of leather, by which the Falconer holdeth his Hawk fast, folding it many times about his finger.

The *Lure* is that whereto Falconers call their young Hawk, by casting it up in the air; being made of Feathers and leather, in such wise that in the motion it looks not unlike a fowl.

M.

THe *Mail* of a Hawk is the Breast or Plumage of the Breast in reference to its colour: So they say a Hawk changes the mail, or is white-mail, &c.

To *mail* a Hawk is so to wrap her up in a handkerchief, or other cloth, that she may not be able to stir her Wings or struggle.

Muting is the excrement or ordure that comes from a Hawk, and contains both dung and urine.

A *make-hawk* is an old staunch flying Hawk, which being inured to her flight will easily instruct a younger Hawk.

To *make* or *manage* a Hawk, is by Art to prepare, fit, and instruct her to fly at any game.

The *Mew* is the place, whether it be abroad, or in the house, where you set down your Hawk during the time she changes her feathers. The word *mew* signifies to change, being derived of the Latine *mutio*.

N.

THe *Nares*, i. e. The Nostrils: It is a Latine word.

P.

Pluming is when a Hawk seizeth on a Fowl, and plucks the feathers from the body.

Plumage are small downy feathers, which the Hawk takes, or are given her for casting. The *Pelt* is the dead body of any fowl however dismembred.

The

The *Pill* and *pelf* of a fowl is that broken remains or refuse, which are left after the Hawk hath been relieved.

The *Plume* is the general colour or mixture of feathers in a Hawk, which sheweth her constitution.

A *Pearch* is that whereon you set down your Hawk when you put her off your fist.

The *Pannel* is that part of the Hawk next her fundament. I take it, they mean the stomach [*ventriculus*] by this word.

Q.

THe *Quarry* is the fowl which is flown at, and slain at any time, especially when young Hawks are flown thereto.

R.

A *Ramage-Hawk* or Brancher is a young Hawk that hath just left the Nest, but flies not far from it, only leaping from bough to bough, and following the old one.

Ramage is also said of a Hawk that is wild, coy, or disdainful to the man, and hard to be reclaimed.

Reclaiming is to tame, make gentle, or bring a Hawk to familiarity with the man.

A *Rafter-hood* is the first hood a Hawk wears, being large, wide, and open behind.

S.

THe *Sarcel* is the extreme pinion feather in a Hawks Wing. *Seizing* is when a Hawk takes any thing into her foot, and gripeth or holdeth it fast.

Slicing, is when a Hawk muteth from her long-ways, in one entire substance, and doth not drop any part thereof.

Stouping is when a Hawk being on her Wings at the height of her pitch, bendeth violently down to strike her prey.

Summed is when a Hawk hath all her feathers, and is fit to be taken out of the mew.

Setting down is putting a Hawk into the mew.

A *Sore-hawk* is from the first taking her from the Eyrie till she hath mew'd her feathers.

To *Seel* a Hawk is artificially to sow up her Eyes, so that she may see but little.

T.

THe *Train* of a Hawk is her Tail.

Trussing is when a Hawk raseth a fowl aloft, and so descendeth down with it to the ground.

To *truss* a Hawk is to tye her Wings so as she cannot stir them.

U.

Unsummed is when a Hawks feathers are not come forth, or not come to their full length.

Varvels joyning the *Jesses* to the Lease.

W.

Weathering is setting abroad your Hawk to take the air either by day or by night, in the frost or in the Sun, or at any other season.

CHAP. II.

Some general Rules and Observations for a Falconer or Ostrager to remark and practise, collected out of Carcanus and other Authors.

1. **A** Falconer out to learn and mark the quality and mettle of his Hawks, to know which he shall fly with early, and which late.
2. He must be fond of his Hawk, patient with her, and careful to keep her clean of Lice and Mites, &c.
3. He must rather keep his Hawk high and full of flesh than poor and low, being when poor much more subject to infirmities.
4. Every night after flying he must give her Casting, sometimes Plumage, sometimes pellets of Cotton, or the like: Sometimes also he must give her Phylie, as by her casting and mewts he shall perceive her to need it.
5. Every night he must make the place very clean under her Perch, that he may know assuredly whether she hath cast or not; and by her casting whether she needs scouring, Stones, or the like.
6. He must remember every day to weather his Hawk in the Evening; excepting such days wherein she hath bathed; after which in the Evening she should be put in a warm room, on a Perch with a Candle burning by her, where she must sit unhooded if she be gentle, to the end she may trick her self, and rejoice by enoiling her after the water, before she fly again. In the morning early he must also set her out to weather, where she may cast, if she hath not done it already, and there keep her hooded till such time as she goes into the field.
7. In feeding his Hawk he must beware of giving her two sorts of meat at one time; and have a care that what he give her be perfectly sweet.
8. If he have occasion to go abroad, let him not leave his Hawk tied on too high a Perch, for fear of bating and hanging by the heels, whereby she may spoil her self. Two Hawks must not be set so near as to approach one another, for fear of crabbing.
9. He ought to carry into the field with him mummy in powder, with other medicines; for frequently the Hawk meets with many accidents, as bruises at encounters, &c. nor must he be unfurnished with Aloes washit, Cloves, Saffron, Casting, Cryance, and such like necessary implements, as coping Irons to cope the Beak and Talons, if need be.
10. He must be able to make his Lures, Hoods, Jesses, Bewets, and other needful furniture.

CHAP. III.

Of the reclaiming and managing long-winged Hawks, and first of the Falcon.

§. I.

Of the reclaiming and making a Falcon, out of Turbervile, according to Tardiff, as I suppose.

A Falcon newly taken should be feel'd in such sort, that when the feeling begins to slacken, she may see forwards the meat that is streight before her, for she is better content when she sees it so, than if she saw it sideways, or looking back. And she should not be feel'd too streight.

Such a Hawk should have all new furniture, as new Jesses (mailed) a Lease made with a button at the end, and new Bewets. You must also have a little round stick hanging in a string, with which you must frequently stroak your Hawk. For the more she is handled, the sooner and better will she be reclaimed and manned, she must have two good Bells, that she may the better be found and heard when she stirreth or cratteth. Her Hood must be well fashioned, raised and bolstered against her Eyes, deep, and yet streight enough beneath, that it may better abide on her head without hurting her. You must also a little cope her Beak and Talons, but not so near as to make them bleed. The

The *Soar-Falcon*, which hath been timely taken, and already passed the Seas, is held by some to be the best *Falcon*, and also hard to be won and manned: Such an one you must feed with warm meat, as Pigeons, and such like quick birds, until she be full gorged, twice a day for three days. For you must not all at once break her off her accustomed diet, which was warm meat.

When you feed her you must whoop and lure as you do when you call a Hawk, that she may know when you will give her meat.

You must unhood her gently, giving her two or three bits, and putting on her Hood again give her as much more. Be sure that she be close feel'd. After three days, if you perceive her feed with a good appetite, begin to abate her meat, giving her but little at once and often till Evening, and bear her late on your fist before you go to bed, setting her near you, that you may wake her often in the night. Before day take her on your fist again, with some quick bird. After two or three nights, when you find she begins to grow gentle, and feed eagerly on good meat, change her diet, giving her sheeps heart, often, but little at once.

Later at Even let her feeling thread a little loose, spouting water in her face, that she may jeouk the less, and watching her all night hold her upon your fist unhooded. But if she see any thing she dislikes, and makes shew of being afraid, carry her into some dark place, where you have no more light but to hood her again. Afterwards give her some beaching of good meat; and watch her divers nights together till she be reclaimed, and jeouk upon the fist by day. Although to let her jeouk also sometimes in the night will make her the sooner manned. In the Morning by break of day give her warm meat. When she begins to be acquainted you may unhood her in the daytime far from company; at taking off, and after putting on the Hood, giving her a bit or two of meat. For to unhood her in a place where she may be frayed is enough to mar her at first. When she begins to be acquainted with company, and is sharp-sit, unhood her, and give her a bit or two, holding her right against your face, for that will cause to dread no company. At night cut the thread wherewith she was feel'd. You need not watch her, but only let her by you, and wake her two or three times in the night. For over-watching is not good, if she may be reclaimed otherwise. When you have brought her thus far, then give her washit meat, laid in clear water half a day, and beach her in the morning, that she may always have somewhat in her gorge. Cause her to feed in company, giving her about Sun-rising the wing of a Hen or Pullet, and at Evening take the foot of a Hare or Coney, chopt off above the joyn, and flay it, cutting away the Claws; steep the skin in fair water (pressing and wringing it a little) the which you shall give her with the joyn of the pinion of a Hens wing. Give your Hawk no feathers till she be thoroughly reclaimed: For till then she dares not cast on the fist: and on the fist you must bear her till she be thoroughly manned. When she makes semblance to cast, unhood her gently by the tassel of the hood. [You may give her two days washit meat, and the third Plumage, as she is clean or foul within.] When she hath cast, hood her again, giving her nothing to eat till she hath gleamed after her casting; but when she hath cast and gleamed give her a beaching of hot meat in company, by two or three bits at once: And at Evening make her plume a Hens wing, being in company also.

If the feathers of her casting be foul or slimy, and of a yellowish colour, besure to cleanse her with washit meat and casting: If she be clean within, give her not so strong casting as Hares feet, but the pinion of an old Hens wing, or the neck-bone chopt four or five times between the joyns, washed and steeped in fair water.

§. II.

How to lure a Hawk lately manned.

Having well reclaimed her, thoroughly manned her and made her cager and sharp-sit, then you may venture to feed her on the lure.

But before you shew her the lure you must consider these three things: 1. That she be bold and familiar in company, and no ways afraid of Dogs and Horles. 2. That she be sharp-set and hungry, regarding the hour of the Morning and Evening when you will lure her. 3. That she be clean within. The Lure must be well garnished with meat on both sides, and you must abscond your self when you would give her the length of the Lease. You must first unhood her, giving her a bit or two on the Lure, as she sitteth on your fist: Afterwards take the Lure from her, and so hide it that she see it

Fff

not;

not; and when she is unfeized, cast the Lure so near her that she may catch it within the length of her Leafe; use your voice according to the custom of Falconers, and feed her upon the Lure on the ground, with the heart and warm thigh of a Pullet. Having so lured her at Evening give her but a little meat, and let this luring be so timely that you may give her Plumage, and the jack of a joyn.

In the Morning betimes take her on your fist, and when she hath cast and gleamed give her a little beaching of warm meat. Afterwards when it is time to feed her, take a Creance, and tie it to her Leafe, and go into some pleasant field or meadow, and give her a bit or two on the Lure; and if you find that she is sharp-set, and hath seized eagerly on the Lure, then give her some one to hold, to let her off to the Lure. Then unwind the Creance, and draw it after you a good way; and let him which holds the Hawk hold his right hand on the Tassel of the Hawks hood in readiness, so that he may unhood her as soon as you begin to lure: And if she come well to the Lure, and stoop upon it roundly, and seize it eagerly, then let her eat two or three bits thereon. Then unfeize her and take her off the Lure, hood her, and deliver her again to him that held her, and going further off lure her, feeding her as before with the accustomed voice. Thus lure her every day further and further off, till she is accustomed to come freely and eagerly to the Lure. After this lure her in company, but have a care that nothing affright her and when you have used her to the Lure on foot, then lure her on horseback, which you may effect the sooner, by causing horsemen to be about you when you lure her on foot: Also you may do it the sooner by rewarding her upon the Lure on horseback among horsemen. When this way she grows familiar, let some body on foot hold the Hawk, and he that is on horseback must call and cast the Lure about his head. Then must the holder take off the hood by the Tassel: And if she seize eagerly upon the Lure, without fear of man or horse, then take off the Creance, and lure her loose at a greater distance. And if you would have her love Dogs as well as the Lure, call Dogs about you when you feed her, or give her Tiring or Plumage.

§. III.

Of bathing a Falcon lately reclaimed, and how to make her flying, and to hate the Check.

Having weaned your Hawk from her ramageness, she being both ways lured, thoroughly reclaimed, and likewise in good case, offer her some water to bathe her self in, in a Basin, wherein she may stand up to the thighs, chusing a temperate, clear day for that purpose. Having lured your Hawk, and rewarded her with warm meat, in the Morning carry her to some bank, and there hold her in the Sun till she hath endewed her gorge, taking off her hood, that she may preen and pick her self: That being done hood her again, and set her near the Basin, and taking off her hood let her bathe as long as she pleases: After this take her up, and let her pick her self as before, and then feed her. If she refuse the Basin to bath in, shew her some small River or Brook for that purpose. By this use of bathing she gains strength and a sharp appetite, and thereby grows bold: But that day wherein she batheth give her no waht meat.

If you would make your Falcon upwards, the next day after she hath bathed get on horse-back, either in the Morning or Evening, and chuse out some field wherein are no Rooks or Pigeons: Then take your Lure well garnished on both sides, and having unhooded your Hawk give her a bit or two on the Lure, then hood her: Afterwards go leisurely against the Wind, then unhood her, and before she bate, or find any Check in her eye, whistle her off from your fist fair and softly. As she flieth about you trot on with your horse, and cast out your Lure, not suffering her to fly long about you at first: Continue thus doing Morning and Evening for seven or eight days. But if you find your Hawk unwilling to fly about you, or stoop to the Lure, then must you let her fly with some Hawk that loves the company of others, and will not rove at any Change or Check: And that must first be done at a *Partridge*, for they will not fly far before the Hawk. If she hath flown twice or thrice, cast out the Lure, and reward her on horse-back, feeding her up to a full gorge, on the ground, with good hot meat, to make her more courageous and resolute in flying, and to return to you with a better will. If the fowl you flew her at be killed by another Hawk, let her feed with him a little, and then further reward her on the Lure.

If you would have your Hawk prove upwards and high-flying, you must let her fly with such as are so qualified. If she love the company of others, and is taught to hold in the Head, then if the Fowl be in Pool, Pit, or Plath, cast off your high-flying Hawk, and let him that hath your new-lured Hawk get under the Wind, and when he seeth his advantage let him unhood her, and if she bate, it is out of desire to get up to the other Hawk. Let him then cast her off, and before she get up to the other, now near his full pitch, lay out the Fowl. If she kill her Game reward her with the heart, and let her partake of the Breat with the other Hawk.

To take your Falcon from going off to any check, thus you must do. If she hath killed a check, and hath feed thereon before you could come in, rebuke her not severely at first, but take her down to the Lure, give her a bit or two, hood her, and fly her not in three or four days; and if you do, let it be where no checks are: But if you come in before she hath tasted the check she hath killed, then take the Gall of a Hen and anoint the breast of the fowl she hath killed [any other bitter thing will do, but you must not put on too much] and this will make her hate to go at Check again, hvi ng little list to fly at such a fowl.

§. IV.

How to enchain and make a Falcon, with her castings and scowings, &c.

The longer a Falcon hath been in the Falconers hands the harder she is to be enchain'd: Because a Hawk that preyeth for her self feeds cleaner and better according to her nature; and hath the benefit of open air, and more exercise. When you draw your Hawk out of the Mew, if she be greasie, (which you shall know by the roundness of her thighs, and fulness of her body, the flesh being round, and as high as her Breast bone,) and if she be well mew'd, and have all her feathers full summed, then give her in the Morning a bit or two of hot meat: at night give her but little, unless it be very cold. If she feed well and freely, then give her waht meat thus prepared: Take the Wings of a Hen or Pullet for her dinner, and wash them in two waters; and if you give her Hares flesh or Beef, let it be washed in three waters: On the morrow give her the Leg of a Hen very hot, and at Noon meat temperately waim, a good gorge, then let her fast until it be late in the Evening; and if she have put over her meat, then give her a little warm meat, as you did in the Morning, and thus let her be dieted till it be time to give her Plumage: Which you shall know by three tokens. 1. By the tenderness and softness of the flesh at the end of the pinnion of the Wing, above what it was before she eat waht meat. 2. By the mewts being clean and white, the black thereof being right black, and not mingled with any foul thing or colour. 3. If she be sharp-set and plume eagerly. You may give her casting of a Hares or Conies foot, as was before prescribed, or the small feathers on the pinnion of an old Hens Wing.

Having set her on the Peach, sweep clean underneath, that you may see whether the mewt be full of streaks, or skins, or limy: If it be, then continue this sort of casting three or four nights together; but if you find the feathers digested and soft, and that her casting is great, then take the Neck of an old Hen, and cut it between the joyns; then lay it in cold water, and give it your Falcon three nights together: In the day-time give her waht meat after this casting or plumage, as you shall see requisite: And this will bear all down into the pannel.

When you have drawn your Falcon out of the Mew, and her principal feathers be not yet full summed, but some in the quill, do not give her waht meat, but quick birds, and good gorges thereof, and set her as much as may be in open places, for otherwise her feathers may chance to shrink in the quill and come to nothing.

When you feed your Falcon call and lure as if you called her to the Lure, and every day profer her water, and every night give her castings accordingly as she endeweth. Take off her hood frequently in company, that you may hinder her from bating, holding the hood always ready by the Tassel in your hand.

In the Evening by Candle-light take off her hood among company, till she rowze and mewt; then let her on the Peach, and not before, setting a light before her.

Every Falcon ought to have a *Make-Hawk* to teach her to hold in the head: If that will not do, cut off some part of her two principal feathers in each Wing, the long one, and that next to it, which will force her to hold in.

Be sure to reward your Hawk well at the beginning, and let her feed well on the Quarry, which will so encourage her that she will have no fancy to go out to the Check. When she is well in blood and well quarried, then let her fly with other Hawks.

If you would make your Falcon to the Crane, her Lure should be a counterfeit Crane. If you would make her to the Hare, her Lure should be then a Hares Skin stuffed with some light matter: When she is well lur'd, and you would enter her, tie the Hares Skin so stuffed to the end of a Creance, and fasten it to your Saddle-pommel, by which means when you gallop it will resemble a running Hare: Then unhood your Hawk, and cry, *Back with the Dogs, Back with the Dogs*. When you find she hath seized it, let her go your Creance, and suffer her to fasten thereon; then instantly reward her upon it, and encourage her as much as is possible.

When she is well entered after this manner, take a living Hare and break one of her hinder Legs, and having before well acquainted your Falcon with your Dogs by continual feeding among them, I say then put your Hare out in some fair place with your Dogs, and the Falcon will stoop and *ruff* her until the Dogs may take her; then take the Hare from the Dogs, and cast her out to the Falcon, crying, *Back, back there*.

If you would make your Hawk flying to the Partridge or Pheasant after she is reclaimed and made, then every time you lure her cast your Lure into some low Tree or Bulb, that she may learn to take the Tree or *Stand*: If she take the Stand before she sees the Lure, let her stand a while, and afterwards draw the Lure out before her, and cry with what words you have acquainted her to understand you by, and then reward her well. After this manner she will learn to take *stand*.

Feed her always on the ground, or in some thick place, for in such places she must encounter with the Pheasant at Pearch.

At first fly with her at young Pheasant or Partridge, to encourage her by advantage, and afterwards at the old.

If a Falcon will not take *stand*, but keep on the Wing, then must you fly her in plain places where you may always see her upon you.

Draw your Falcon out of the *Mew* twenty days before you *enfeam* her: If she *trips* and *carries*, the remedy is to cope her *Talons*, her *Pawse* and *petty-fing*.

Never reward your Hawk upon River-fowl, but upon the Lure, that she may the better know love, and esteem thereof.

The Crane ought to be flown at before Sun-rising, for she is a lothful Bird, and you may cast off to her a *Cast* or *Leaf* of Falcons, or a Goshawk from the Fitt, without Dogs. You must fly but once a day at the Crane, after which you must reward your Hawk very well, ever succouring her with the Greyhound, which is the best of Dogs for that purpose.

Give your Falcon a Beaching very early in the Morning, and it will make her very eager to fly when it is time for it.

If you would have her a high-flying Hawk, you must not feed her highly, but she should be fed nine days together before Sun-rising, and at night late in the cool of the Evening.

The Falcon will kill the Hern naturally if she be a Peregrin or Traveller: Yet you will do well to give her *Trains*.

A Falcon may fly ten times in a day at a River, if the Season be not extreme, but more is inconvenient.

A Hawk ought to have forty Castings before she be perfectly made. And indeed all Hawks ought to have Castings every night, if you would have them clean and sound: For Hawks which have not this continual nocturnal Casting will be surcharged with abundance of superfluous Humours, which ascending to the Brain, breed so great a disturbance that they cannot fly so high as otherwise they would. And it is good to give them Tiring or Plumage at night, especially Field-Hawks, but not River-Hawks, for fear of weakening their Backs.

When your Hawk hath flown or bated, feed her not so long as she panteth, (but let her be first in breath again;) otherwise you may bring her into a disease called the *Pantas*.

If a Falcon or other Hawk will not *seize* nor *gorge*, take the Quill of a Wild-geese, and tie it under her long *Single*; then will she *seize* and *gripe*. When she beginneth to *seize*, take away the said Quill, and she will *seize* long afterwards.

If you cannot give Covert to your Falcon or Goshawk, then cast her off with the Sun in her back.

CHAP. IV.

How to man, hood, and reclaim a Falcon according to an Italian Falconer, quoted by Turbervile.

Let his *Jeffes* and *Benets* be of good Leather, having Bells big and shrill according to the proportion of the Hawk, with a Hood that is boiled at the Eyes, and fizable for the Head.

He must use his Hawk in such manner that he may make her grow familiar with him alone, or in company, and to that end he must often unhood and hood her again.

In nine nights the Falconer ought not to let his Hawk *junk* at all, nor suffer her to pearch, but keep her during that time continually on his Fitt.

When the Falconer would call his Hawk, let him set her on the Pearch, unhood her, and shew her some meat within his Fitt, call her so long till she come to it, then feed her therewith: If she come not, let her stand without food till she be very sharp set. Observe this order for about nine days.

When you would lure her, give her some man to hold, and call her with a Lure well garnished with meat on both sides, and give her a bit: Use her to this fix or seven days, then cause her to be held farther from you, and cast the Lure about your head, and throw it on the ground a little way from you: if she come to it roundly, reward her bountifully, walking softly about her while she is feeding on the Lure, and using your voice. Having used her to this some certain days, take your Lure garnished as aforesaid, and every day call her to you as far as she may well see or hear you, and let her be looke from all her furniture, without *Loins* or *Creance*. If she come freely, reward her, and stop her now and then in her feeding, for that will make her come the better. Call her also sometimes on horseback. After you have thus used her a month, or till she will come freely to you, you may do well to stop the Lure upon her sometimes, and let her fly upon you. Here note, it is requisite to bathe her before you take this course, lest when she is at liberty she *rangle* to seek water, and in the mean time you lose your Hawk; wherefore bathe her every seven or eight days, for her nature requireth it.

When you have thus manned, reclaimed, and lured your Hawk, go out with her into the Fields, and whistle her off your Fitt, standing still to see what she will do, and whether she will *take* out or not: But if she fly round about you, as a good Hawk ought to do, let her fly a Turn or two, and fling her out the Lure, and let her *foot* a Chicken or Pullet, and having killed it, let her feed thereon.

Unhood her often as you bear her, continue so doing till she hath endewed and mevted sufficiently.

Your Hawk being thus made and mann'd, go abroad with her every Morning when it is fair, and let the place where you intend to fly her be plathy, or some narrow Brook; and when you cast her off, go into the Wind so far that the Fowl may not discover you. When she is cast off, and beginneth to recover her *Gate*, make then to the Brook or Plath where the Fowl lie, always making your Hawk to *lean* in upon you: And when you see her at a reasonable pitch, (her Head being in) lay out the Fowl, and land it if you can; and if you cannot, take down your Hawk, and let her kill some *Train*, to which end you must always carry some live Fowl with you, as a Duck, &c. And having slipped one of her Wing-feathers, thrust it through her *Nose*, and cast her up as high as you can underneath your Hawk, that she may the better know your hand. Never fly a young Hawk without some *Train*, that if she fail to kill the wild Fowl, you may make her kill that.

If you would have your Hawk fly at one particular Fowl more than at another, you must then feed her well upon a *Train* of the same kind, as thus: Take a Creance and tie that Fowl you would accustom her to fly to by the Beak, with meat on her back, and cause one to stand close that shall hold the Creance; then standing afar off unhood your Hawk, and let the Fowl be stir'd and drawn with the Creance until your Hawk perceive it stir; and if she *foot* it, make another *Train* thus: Take a living Fowl that can fly, half *feel* it, and cast it out; then let your Hawk fly to it; and if she kill it, reward her well upon it.

CHAP. V.

How to man and make a Falcon according to Carcanus the Vicentine, abbreviated.

§. I.

Of the Eyas or Nyas Falcon.

THese, he saith, seldom prove well, and require much pains and patience to make them kill and stoop a Fowl well, or fly to a high pitch.

But if any one will needs be doing with them, he advises him, first to make them to the *Heron* from the Fift, or to other such great fowls; for that they are bold and hardy birds, and good feeders.

After they are entred to these and well in bloud, you may make them to the River going into some large field, where there be Crows, or some other great Fowl, with your Hawk on your fist; loose her hood in a readines, drawing as near the Fowl as you can; and the first fowl that springs unhood her and let her fly from the fist to it; that it may draw the Hawk upwards. When she is at a reasonable pitch, throw her out a Duck or Mallard feel'd, with a feather through the *Nares*, and if she kill it, then reward her well, and feed her upon it with as much favour as you can, always luring and crying to her to encourage her.

§. II.

Of the Ramage-Falcon.

IF a Falconer chance to recover a Ramage-Hawk that was never handled before, let him immediately feel her, and at that instant put on her Jelles made of soft Leather, at the end thereof fix two Varvels, the one may bear your Coat of Arms, the other your Name, that if she chance to be lost, they that take her up may know where to return her: Put her on also a pair of Bells with two proper Bewets. Having thus furnished her, you must begin her manning by gentle handling. To avoid the danger of her Beak, you must have a smooth stick about half a foot in length, with which you must stroak your Hawk about the Pinions of her Wings, and so downwards thwart her Train. If she offer to snap at the Stick, withdraw not your hand, and let her bite thereon, the hardness whereof will soon make her weary of that sport.

If you would man her well, you should watch all the night, keeping her continually on your Fift.

You must teach her to feed feel'd; and having a great and easie Ruffer-hood, you must hood and unhood her often, feel'd as she is, handling her gently about the Head, *coying* her always when you unhood her, to the intent she may not be displeased with her Keeper.

Let her plume and tire sometimes upon a Wing on your Fift, keeping her so day and night, without perching, until she be weary, and will suffer you to hood her without stirring.

If your Hawk be so rammage that she will not leave her snapping or biting, then take a little *Aloes socotrina*, and when she offers to snap, give it her to bite; the bitterness whereof will quickly make her leave that ill quality. Garlick I have heard will do the like, the strong sent thereof being equally offensive.

§. III.

How to hood a Hawk.

HAVING feel'd your Hawk, fit her with a large easie Hood, which you must take off and put on very often, watching her a night or two, handling her frequently and gently about the Head as aforesaid. When you perceive she hath no aversion to the Hood, unfeel her in an evening by Candle-light, continue handling her softly, often hooding and unhooding her, until she takes no offence at the Hood, and will patiently endure handling.

Take

Take this Observation by the way, that it is the duty of a Falconer to be endowed with a great deal of Patience; and in the next place he ought to have a natural love and inclination to Hawks: without these two qualifications all the Professors of this Art will prove *Mar-Hawks* instead of good Falconers.

But to return where I left off: If your feel'd Hawk feeds well, abides the Hood and handling without striking or biting, then by Candle-light in an Evening unfeel her, and with your finger and spittle anoint the place where the Seeling-thread was drawn through; then hood her, and hold her on your Fift all night, often hooding, unhooding, and handling her, stroking her gently about the Wings and Body, giving her sometimes a bit or two, also Tiring or Plumage. Being well reclaimed from striking and biting at your hand, let her sit upon a Perch; but every night keep her on the Fift three or four hours, stroaking, hooding, and unhooding, &c. as aforesaid: And thus you may do in the day-time, but in a Chamber apart, where she may see no great light, till she feed surely and eagerly without dread.

§. IV.

How to make a Hawk know your Voice, and her own Feeding.

HAVING mann'd your Hawk so that she feeds boldly, acquaint her with your Voice, Whistle, and such words as Falconers use: You may do it by frequently repeating them to her as she is feeding on your Fift, &c. But I think the best way of making her acquainted with them is by your experience and practice. If your Hawk be not eager or sharp-set, wash her meat sometimes in fair water, and other whiles in Urine, wringing it a little, and feeding her with it for two or three gorges, intermitting a day or two.

When she feeds boldly, and knows your Voice and Whistle, then teach her to know her Feeding, and to bate at it, in this manner. Shew her some meat with your right hand, crying and luring to her aloud: if she bate or strike at it, then let her quickly and neatly foot it, and feed on it for four or five bits. Do thus often, and she will know her Feeding the better.

After this give her every night some Casting either of Feathers, or Cotton with Cloves or Aloes wrapt up therein, &c. These Castings make a Hawk clean and eager.

§. V.

How to make your Hawk bold and venturesome.

IN the first place, to make her hardy, you must permit her to plume a Pullet or large Chicken in a place where there is not much light: Her Hood in a readines, you must have either of the aforesaid alive in your hand; then kneeling on the ground, luring and crying aloud to her, make her plume and pull the Pullet a little; then with your teeth drawing the Strings, unhood her softly, suffering her to pluck it with her Beak three or four times more; then throw out the Pullet on the ground, and encourage her to seize it. When you perceive she breaks it and takes bloud, you must lure and cry aloud to her, encouraging her all the ways imaginable: Then hood her gently, and give her Tiring of the Wing or Foot of the said Pullet.

§. VI.

How to make a Hawk know the Lure.

YOUR Hawk having three or four times thus killed a Pullet or large Chicken in some secret place, then thus teach her to know the Lure.

Having fastned a Pullet unto your Lure, go apart, giving your Hawk unto another, who must draw loose the Strings of her Hood in readines: Being gone a little way, take half the length of the String, and cast it about your Head, luring with your voice at the same time; then let your Hawk be unhooded as you are throwing your Lure a little way from her, not ceasing luring all the while. If she stoop to the Lure and seize, suffer her to plume the Pullet, still *coying* and luring with your voice; then let her feed on the Pullet upon the Lure: After that take her on your Fift together

ther with her meat, then hood her and let her tire as aforesaid. And thus you may teach her to come by degrees to a very great distance.

§. VII.

How to make a Hawk flying.

When your Hawk or Haggard-Falcon will come and stoop to the Lure roundly without any fear or coynefs, you must put her on a great pair of Luring-bells; the like you must do to a Soar-Hawk: By so much greater must the Bells be by how much your Hawk is giddy-headed, and apt to *rake* out at *Check*.

That being done, and she sharp set, go in a fair morning into some large Field on Horseback, which Field must be very little incumbered with Wood or Trees: Having your Hawk on your Fift, ride up into the wind, and having loosed her Hood whistle softly, to provoke her to fly; and then you will observe she will begin to bate, or at least to flap with her Flags and Sails, and to raise her self on your Fift: Then suffer her until the rouze or mewt: When she hath done either of them, unhood her, and let her fly with her Head into the wind, for thereby she will be the better able to get upon the Wing; then will she naturally climb upwards, flying in a circle.

When she hath flown three or four Turns, then cry and lure with your voice, casting the Lure about your head, unto which you must first tie a Pullet: And if your Falcon come in and approacheth near you, then cast out the Lure into the wind; and if she stoop to it, reward her as before.

There is one great fault you will often find in the making of a Hawk flying, and that is, when she flieth from the Fift she will not get up, but take stand on the ground; a frequent fault in Soar-Falcons. You must then fright her up with your Wand, riding in to her; and when you have forced her to make a Turn or two, take her down and feed her. But if this do no good, find out some Chough, Starling, or such like bird, and making ready your Hawks Hood, draw as near them as you may till they rise. Then unhood your Hawk, and no doubt if she will fly them, they will train her well upwards. Then you must have in readiness a Duck feel'd so that she may see no way but backwards, and that will make her mount the higher. This Duck you must hold by one of the Wings near the body in your right hand, then lure with your voice to make your Falcon turn the head: When she is at a reasonable pitch, cast up your Duck just under her, that she may perceive it: If she *strike*, *stoop*, or *truss* the Duck, permit her to kill it, and reward her, giving her a reasonable Gorge. Use this custom twice or thrice, and your Hawk will leave the Stand, delighting on the Wing, and will become very obedient.

Here note, that for the first or second time it is not convenient to shew your Hawk great or large Fowl, for it often happens that they slip from the Hawk into the wind; the Hawk not recovering them, *raketh* after them, which puts the Falconer to much trouble, and frequently occasions the loss of his Hawk.

But if it so chance that your Hawk *so rake* out with a Fowl that she cannot recover it, but gives it over, and comes in again directly upon you, then cast out a *fecked* Duck; and if she stoop and truss it, cross the Wings, and permit her to take her pleasure, rewarding her also with the Heart, Brains, Tongue, and Liver. For want of a quick Duck, take her down with the dry Lure, and let her plume a Pullet, and feed her upon it.

By so doing your Hawk will learn to give over a Fowl that *rakes* out, and hearing the Lure of the Falconer, will make back again to the River, and know the better to hold in the Head.

§. VIII.

A flight for a Haggard.

When you intend a Flight for a Haggard, for the first, second, and third time make choice of such a place where there are no Crows, Rooks, or the like, to take away all occasion of her *raking* out after such *Check*.

Let her not fly out too far on head at the first, but run after and cry, *Why lo, why lo*, to make her turn Head. When she is come in, take her down with the Lure, unto which must be fastned a live Pullet, and let her tire, plume, and feed as aforesaid.

Sometimes

Sometimes a Haggard out of pride and a gadding humour will *rangle* out from her Keeper: Then clog her with great Luring-bells, and make her a Train or two with a Duck feel'd, to teach her to hold in and know her Keeper: Take her down often with the dry Lure, and reward her bountifully, and let her be ever well in blood, or you may whoop for your Hawk to no purpose.

§. IX.

How to make a Soar-Falcon or Haggard kill her Game at the very first.

If she be well lured, flieth a good Gate, and stoopeth well, then cast off a well quarried Hawk, and let her stoop a Fowl on Brook or Plash, and watch her till she put it to the plunge; then take down your *Make-Hawk*, reward her, hood her, and fet her: So you may make use of her if need require.

Then take your Hawk unentred, and going up the wind half a Bow-shot, loose her Hood, and softly whistle her off your Fift, until she have rouzed or mewted: Then let her fly with her Head into the wind, having first given notice or warning to the company to be in readiness against the Hawk be in a good Gate, and to shew water, and to lay out the Fowl.

When she is at a good pitch, and covering the Fowl, then notify that all the company make in at once to the Brook upon the Fowl, to land her: If your Falcon strike, stoop or truss her Game, run in to help her, and crossing the Fowls Wings, let her take her pleasure thereon.

If she kill not the Fowl at first stooping, give her then respite to recover her Gate. When she hath got it, and her Head in, then lay out the Fowl as aforesaid, until you land it at last; not forgetting to help her as soon as she hath seized it, giving also her due Reward. You shall do well always to have a quick Duck in readiness, that if the Hawk kill not the Fowl stooped you may feel and throw it up to her being at her pitch.

§. X.

Remedy for a Hawks taking Stand in a Tree.

IN the first place you must chuse such places where are no Wood or Trees, or as little as may be. If you cannot avoid it, then have two or three live Trains, and give them to as many men, placing them conveniently for to use them. When therefore your Hawk hath stooped, and endeavours to go to Stand, let him to whom the Hawk most bends cast out his *Train-Duck* feel'd: If the Hawk kill her, reward her therewith. If this course will not remedy that fault in her by twice or thrice so doing, my advice is then to part with the Buzzard.

§. XI.

How to help a Hawk forward and coy through pride of grease.

There is a survy quality in some Hawks proceeding from pride of grease, or being high kept, which is a disdainful Coynefs. Such a Hawk therefore must not be rewarded although she kill: Yet give her leave to plume a little; and then let the Falconer take a Sheeps Heart cold, or the Leg of a Pullet, and whilst the Hawk is buisie in pluming, let either of them be conveyed into the body of the Fowl, that it may favour thereof; and when the Hawk hath eaten the Brains, Heart, and Tongue of the Fowl, then take out your Inclosure, and call your Hawk with it to your Fift, and feed her therewith: After this give her some Feathers of the Neck of the Fowl to scour and make her call.

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§. XII.

§. XII.

What must be done when a Hawk will not hold in the Head.

IF you find your Hawk rake after Checks, and lean out so far that neither Whooping, Luring, nor casting of the Hawks Glove is any way available, but she rather gads out more and more, and at last flies away; I know not how to advise otherways, than to follow after with Whooping and Luring: If she turn and come to the Lure, shew her all the kindness imaginable. This fault is frequently found in Soar-Hawks, or Hawks of the first Coat.

§. XIII.

How to keep a Hawk high-flying.

IF your Hawk be a stately high-flying Hawk, you ought not to ingage her in more Flights than one in a morning: For often flying brings her off from her stately pitch. If she be well made for the River, fly her not above twice in a morning; yet feed her up though she kill not.

When a high-flying Hawk, being whistled to, gathers upwards to a great Gate, you must continue her therein, never flying her but upon broad waters and open Rivers; and when she is at the highest, take her down with your Lure; where when she hath plumed and broken the Fowl a little, then feed her up; And by that means you shall maintain your Falcon high-flying, inwards, and very fond of the Lure.

Some will have this high-flying Falcon seldom to kill, and not to stoop: Yet if she kill every day, although she stoop from a high Gate, yet if she be not rebuked or hurt therewith, she will, I can assure you, become a higher Flier every day than other; but she will grow less fond of the Lure. Wherefore your high-flying Hawks should be made inwards, it being a commendable quality in them to *make in* and turn Head at the second or third toss of the Lure, and when she poureth down upon it as if she had killed.

And as the teaching of a Falcon, or any other Hawk, to come readily to and love the Lure, is an Art highly commendable, because it is the effect of great labour and industry: So it is the cause of saving many a Hawk, which otherwise would be lost irrecoverably.

Mark this by the way, that some naturally high-flying Hawks will be long before they be *made upwards*, still *flying* and playing the flugs: And when they should get up to cover the Fowl, they will stoop before the Fowl be put out. And this may proceed from two causes. In the first place, she may be too sharp set; and in the next place, it may be she is flown untimely, either too soon, or too late.

When you see a Hawk use those evil *Tatches* without any visible cause, cast her out a dead Fowl for a dead Quarry, and hood her up instantly without Reward, to discourage her from practising the like another time: Half an hour afterwards call her to the Lure and feed her, and serve her after this manner as often as she filtheth in that fashion.

Besides, to correct this error, the Falconer ought to consult the natures and dispositions of his Hawks, and should carefully observe which fly high when in good plight, and which best when they are kept low, which when sharpest set, and which on the contrary in a mean between both, which early at Sun-rising, which when the Sun is but two hours high, which sooner, and which later in an evening.

For know that the natures of Hawks are different; so are the times to fly each one: For to fly a Hawk in her proper time, and to fly her out of it, is as disagreeable as the flight of a Gerfalcon and a Buzzard. Therefore the Ostrager must fly his Hawks according to their natures and dispositions, keeping them always in good order.

Where by the by take notice, all Hawks, as well Soar-Hawks as Mew'd-Hawks and Haggards, should be set out in the evening two or three hours, some more, some less, having respect to their nature as it is stronger or weaker; and in the morning also according as they cast, hooding them first, and then setting them abroad a weathering, until you get on Horse-back to prosecute your Recreation.

§. XIV.

§. XIV.

To make a Falcon to the Hern.

THis Flight hath less of Art in it than pleasure to the beholders; and to say the truth, the Flight is stately and most noble.

As it is less difficult to teach a Hawk to fly at Fowl than it is to come unto and love the Lure, the first being natural, and not the last; so there is less industry to be used in making a Hawk fly the Hern than Water-Fowl. To the first she is instigated by a natural propensity and inclination; to the latter she is brought with Art, pains, and much diligence.

At the beginning of March Herns begin to make their Passage: If therefore you will adapt your Falcons for the Hern, you must not let them fly longer at the River, and withal you must pull them down to make them light: which is done by giving them Hearts and flesh of Lambs and Calves, also Chickens: But give them no wild meats.

To the intent you may acquaint them one with the other, so that they may the better fly the Hern and help one another, you must call a *Calf* of them to the Lure at once; but have a care they *crab* not together, for so they may endanger one another in their flight.

When your Hawk is scoured and clean and sharp set, you must then get a live Hern, upon the upper part of whose long sharp Bill you must place a joyn of a hollow Cane, which will prevent her from hurting the Hawk: That being done, tie the Hern in a Creance; then setting her on the ground, unhood your Hawk, who will fly the Hern as soon as she sees her. If she seize her, make in apace to succour her, and let her plume and take blood of the Hern: Then take the Brains, the Marrow of the bones, and the Heart, and laying it on your Hawking-glove give it your Falcon. After this rip her Breast, and let your Hawk feed thereon till she be well gorg'd: This being done, hood her up upon the Hern, permitting her to plume at her pleasure; then take her on your Filt, and let her tire on the Foot or Pinion.

Because Herns are not very plentiful, you may preserve one for a Train three or four times, by arming Bill, Head, and Neck, and painting it of the same colour that the Hern is of: And when the Falcon seizes her, you must be very nimble to make in; and deceive by a live Pigeon clapt under the Wing of the Hern for the Falcon, which must be her Reward.

The Hawk having thus several times taken her Train without discovery of the delusion, you may then let the Hern loose in some fair Field without a Creance, or without arming her: When she is up of a reasonable height, you may cast off your Falcon; who if she *bind* with the Hern and bring her down, then make in apace to rescue her, thrusting the Herns Bill into the ground, and breaking his Wings and Legs, that the Hawk may with more ease plume and foot him. Then reward her as before, with the Brains, Marrow of the bones, and Heart, making thereof an *Italian Sop*.

Thus much of a *Train-Hern*. Now to fly the wild Hern it is thus: If you find a wild Hern at *Siege*, win in as nigh to her as you can, and go with your Hawk under the wind; and having first loosed her Hood in a readiness, as soon as the Hern leaveth the *Siege*, off with her Hood, and let her fly. If she climb to the Hern and bring her down, run in (as I said before) to rescue her, thrusting her Bill into the ground, breaking her Wings and Legs, and rewarding her as aforesaid on your Hawking-glove.

Now if your Falcon beat not down the Hern, or do give her over, then never fly your Falcon again at a Hern unless with a *Make-Hawk* well entred; for the coward by this means, seeing another fly at the Hern and *bind* with her, takes fresh courage. And if they kill the Hern flying both together, then must you reward them together while the Quarry is hot, making for them a *Soppa* as aforesaid. This is the only way to make them both bold and perfect Herners.

ϕ. XV.

Of mewing of Hawks.

FALcons may be flown with till St. Georges day; then they must be set down: And be sure to search them for Lice, and if they have any pepper them well. Scowr them also before you cast them into the Mew.

There are two sorts of Mewing: 1. At the *stock or stone*. 2. *Loofe*, or at large.

1. For the *Stock*, the place should be a ground-room, far from all noise or concourse of people. Place therein (upon Trestles two or three foot high) a Table, for length according to the number of your Falcons, and five or six foot broad, with little thin boards of four fingers high nailed along the sides and ends. Fill the Table with great sand, that hath small pebble stones in it, and in the middle place some great free-stones, a cubit high, made taper-wise, but plain and smooth above. Then take a Cord of the bigness of a large Bow-string, put it through a ring, and bind it about the stone, in such sort that the ring or swivel may go round the stone without any let: And thereunto tie the Lease of the Falcon. If you mew more Hawks than one, you must set your stones at that distance, that when they bate they may not reach one another, for crabbing. The great stones for their coolness the Hawks will delight to sit on: The little gravel-stones are for them to swallow. The sand is of use, that when they bate they mar not their feathers, and for the better cleansing their mews: The Cord and Ring, that when the Hawks bate this way or that way they may never tangle, the Ring still following them. All day let your Falcons stand hooded upon the stone, only when they would feed you must take them on the Fist. At night off with their Hoods. To avoid and remedy all ill accidents and inconveniences it were well that the Falconer had his bed in the Mew.

2. If you would mew at large you can mew but one in a room, unless it be so big that you may divide it into several partitions. Twelve foot square is scope enough for one Falcon, with two Windows a foot and an half broad apiece, each fitted with its shut, one toward the North, for cool air, the other toward the East, for the heat and comfort of the Sun. If your Hawk be a great biter your Mew were best be a ground-room, which if it be, you must cover the floor with gross sand four fingers thick, and thereupon set a stone as aforesaid. Besides, you must make her two handsom Pearches, near each Window one, that sitting on the one she may have the comfort of the Sun, on the other the benefit of the fresh air.

Every Week, or at least every Fortnight, set her a Basin of water, that your Hawk may bathe if she desire it, and if she doth, then take it away the night following.

Your Mew must also have a Portal with a little hole below, to convey in the device whercon their meat is served, called among Falconers the *Hack*. And that must be made on this fashion. Take a piece of thick board, a foot and half long, and a foot broad or thereabout, under the which fasten two little Trestles, three or four fingers high. Let them be fast pinned or nailed to. Then bore two holes on each side thereof, and through each of these put a short Cord of the bigness a Bow-string, with the ends downward, and knots fast knit on them under the button of the board, so streight that you cannot raise the Cord above the board above a fingers breadth or thereabouts. And when you would give your Hawks meat, take a little stick somewhat longer than the *Hack*, and as big as your finger, but let it be of strong wood, as Crab-tree, Holly, or such like, and upon that stick bind your Hawks meat, and put the ends of the stick under the cords upon the *Hack*, and so convey it into the Mew to your *Hawks*, that the Hawk may not truss or drag away her meat into the Mew, but as soon as she hath fed and gorged her self, take it away again. It is good to keep one set hour of feeding your Hawk, for so she will mew sooner and better.

This Author prefers mewing at the stock or grate before mewing at large. His reason is, because in that kind of mewing we take our Hawks on the Fist every day, and so may see in what state they be; and if they fall into any sickness or infirmity, may give them proper medicines, which cannot be done when you mew at large. Besides, if we happen upon Hawks that have preyed for themselves, it will be needful to bear them often in the cool air in the morning till mid July or thereabout, yea, and to call them to the Lure, and to ride abroad with them sometimes an hour or two.

Mr. Latham

Mr. Latham is of opinion, that it is better to mew at large, and disapproves mewing at the stock. For (saith he) when she is at large she hath the exercise of her Wings in flying up and down, which must needs be good for her. Also she may go to the water if she be disposed, and takes stones at her pleasure. She may do all things at her own liking, whereas she can do nothing at the stock when she would: Neither can you give her that is fitting to her own content but by guess and imagination, where-in we are many times deceived. And truly upon these considerations I am of his opinion, that it is better to mew at large, than at the stock or stone.

CHAP. VI.

Of the Haggard Falcon.

ϕ. I.

Something of the name and nature of the Haggard Falcon.

HE makes the *Haggard Falcon* to be the same with the *Peregrine*; and is of opinion, that the *Falcon-gentle* and *Haggard* are also of one and the same kind, the only difference being, that the former is the *Eyafs* or *Ramage Hawk*, the latter the same taken wild after she hath preyed for her self, making the word *Haggard* to signifie as much as wild, opposite to gentle or tame. The word *Haggard* is borrowed of the French, *Hagar*, and signifies (as Robert Stephen interprets it) an old Falcon of five or six years, having its pens worn short, or otherwise harmed, and so taken for a price set on its head. Aldrovandus makes the word *Hagar* to be originally Dutch, and to signifie a bunch, whence the Germans call this Falcon *Ein Hager-falck*, or rather *Hoger-falck*, that is, a gibbous or bunch-backed Falcon. But this gibbous Falcon he makes to be a species distinct both from the *Falcon-gentle* and *Peregrine*. For my part, being not willing unnecessarily to multiply species, I incline to Mr. Lathams opinion, that all these are names of one and the same kind of Hawk.

The *Haggard-Falcon* is now-a-days most esteemed, not being (as some write) a choice and tender Hawk to endure wind and weather, but for hardiness far before the *Falcon-gentle*. It is a bird of great spirit and mettle, like a Conquerour in a Country, keeping in awe and subjection most Fowl that lie in so much that the young ones will venture upon *Brants* and *Wild-geese*, till being soundly bruised and beaten by those strong birds, they learn their error, and desist to meddle with such unwieldy game.

She rests no day, but toils continually, unless hindered by extremity of weather. Hence he infers that it is an error in Falconers after a day or two's flying to give their young Hawks a day or two's rest, and concludes that whosoever can fly his Hawk every day, shall have every day a good and perfect Hawk, but he that covets to fly upon rest shall seldom have a good and staid Hawk.

When she hath slain and feasted her prey, if it be a Dove, as soon as she hath broken its neck she presently goes to the place we abhor our *Hawks* should so much as touch, which is the Crop, and takes her pleasure of what she finds there, especially mustard or carlock seed, which he conceives she uses by way of Physick to preserve her health.

ϕ. II.

How to reclaim a Haggard Falcon.

HAVING taken or purchased one of these birds, whether she be full or empty, set her down as soon as you can, and let her rest quietly the first night, either feed, or in a rustler-hood. The next day taking her up gently, carry her continually on your Fist, using a feather to stroke her withal instead of your hand. When she will endure to be touched without starting, pluck off her Hood, and quickly and gently put it on again, holding this course till she begin to feed. Then proffer her meat, but suffer her to take but little at a time, never hooding and unhooding her without a bit or two to quiet her, and win her love to the Hood and your self. Use your voice

to

to her before you take off her Hood, and all the while she is feeding, and no longer, that as she reclaims she may learn to know, that when she hears your voice she shall be fed.

When you have brought her to feed boldly, then teach her to jump to your Fist in this manner. Set her on a Peach breast-high [if it be lower, you must be on your knees; for being so high above her at first, till she be better acquainted, will be apt to fright her.] Then unstrike her Hood, and lure her, using your voice, with a bit or two of meat bestowed on her as she is unhooded, which will make her to love your voice, being careful that she take no sudden fright or dislike; for it is hard to work such impressions out again. Be sure to keep her stomach perfect, sharp, and well edged. For *venter magister artis*, it is that only that guides and rules her; That is the curb and bridle that holds her in subjection to the man, and it is the spur which pricks her forward to perform her duty.

By this time you may pull off her Hood, and let her sit bare-faced, keeping your self as yet close by her. And as you perceive any untoward humour in her, proffer her a bit of meat with your hand, and use your voice to her, to draw her to you, till you have brought her boldly to attend, willingly to receive bits at your hand, and jump readily to your Fist: Then set her to the Lure garnisht with meat, to which when she will readily come in the *Creance*: stay not long in that kind, for she will soon begin to scorn it, and look another way: But let her see a live Dove at the Lure, and lure her to it: Which when she hath killed, and eaten up the head, take her up very gently with a bit of meat, and put on her Hood: Then lure her again to the dead pelt, and so use her two or three times, and no more; for she will quickly grow loth to be taken off, and her desire to keep the pelt will cause her to drag and carry it from you, than which there cannot be a worse quality in a Hawk.

Often luring at one time at her first entering is good to make her perfect quickly; but use it not longer than I have directed, especially to a Field-hawk: For the reason given.

Now it is full time to lure her loose to live Pigeons, which you must let her see at your Lure (to draw her you with love and courage) and also let her seize on them, and kill them at your foot, one after another, for six days together, being sure that he that holds her have skill to let her in with her head right towards you; and lure not far till her stomach be perfect, for otherwise she may spy something by the way which she hath more liking to, and so for that time be lost, which would be very hurtful to her though she should be recovered again.

Likewise forget not all this time of her making (while she is on the ground either pluming or feeding) to walk round about her, using your voice, and giving her many bits with your hand, till you have won her even to lean and bend her body to your hand, and to bring what she hath in her foot toward you. By this time it will not be amiss to spring her up some live Doves, as she comes unto you between the man and the Lure: And be sure they be given in a long Creance, that she may not kill them far from you, but that always she may trust them over your head, and fall near you: For otherwise it may strike a timorous conceit into her, making her sit and stare at you, or carry from you, and sometimes forsake what she hath got, and go her way, when she shall see you coming so far from her.

By this time you may be bold (at a convenient hour in the Evening, when she heareth your voice, and hath you in her sight) to hold in your Lure, and suffer her to fly about you, holding her with your voice and lure as near you as may be, to teach her to do her business, and work it on your head. Then call her up a Dove with a loud voice, &c.

§. III.

How to remedy carrying in a Hawk

THE reason of the Hawks carrying is not the lightness of the Dove, as some pretend, but the unskilfulness or negligence of the Keeper in not dealing gently and kindly with them in their reclaiming, or giving them little or no content in their luring, giving them for a reward only the pelt of a Pigeon, or some other dead thing, whereas their delight is in such as are living. For the prevention of this coynefs or fugitive desire in your Hawk, at her first luring unto live Doves, you must restrain her, and draw her gently to you with your Lure or Creance, not suddenly or rashly, but by

by degrees, and give her some bits of meat with your hand, being on your knees, to please and content her: And by this loving usage you shall find your first Dove to be the worst Dove, and the oftner you use her to them, the quieter she will be: And she did not drag so fast from you at the first, but she will soon come to bring it with as much speed toward you, yea, meet you with it, and be willing to exchange it with you for a bit of meat at your hand.

§. IV.

Of giving stones and casting.

WHEN your Hawk is grown so gentle that she will endure to sit bare-faced in the evening or night amongst company, then it is meet to give her stones. Every night, when she hath put away her supper from above, before you go to bed, give her half a dozen small stones. Give them above hand if you have the art, if not, then otherwise as you like best to cast her. This do till you find her stomach good, and then you may proffer her Casting; but be sure at your first giving it be with her liking: For otherwise I have seen divers Hawks beaten out of love with it, so that they would never take it willingly after. Add to the ink of a Dove as much clean-walsh flannel as will make her a reasonable casting, bearing in mind this old Proverb,

As wash't meat and stones make a Hawk to fly,

So great castings and long fasting maketh her to die.

These stones given at night you shall be sure to have again in the morning: But given in the morning she will either cast them before they have done their work, or keep them all day and the next night. I have learnt by experience that stones given once by night do more good to a Hawk than twice by day, for speedily infaming, or removing any glut or evil humour.

He makes account that stones serve to cleanse the stomach, &c. others are of opinion, that their use is to cool the body: I rather think, that they are of the same use to Hawks as to other birds, viz. to help grind their meat in their stomachs, though I confess there may be difference in this respect between Hawks and other birds; Hawks having rather a membranous than musculous stomach or gizzard.

§. V.

Of bathing your Hawk.

I My self (saith my Author) have had very few Haggards that would ever bathe at all, so long as they continued found: But whensoever I proved them bare-faced abroad, having fitted them with a reasonable gorge, they did themselves more harm by bating, than bathing would have done them good. Therefore if you find your Hawk not disposed to bathing, you were better keep her on your Fist. But after two or three mews, in their declining age, through unnatural heats and fursies they will desire bathing; and then you are not to neglect the occasion; but when the weather will permit, shew her the water, and if she do bathe, let her dry her self abroad if it be fair, and the weather temperate; otherwise let her have the air of the fire with measure, and come no more abroad that day nor night, but set her upon a very warm Peach, and from the air.

Note. This kind of Hawks though you labour them carefully the first year in their making, having brought them to be so familiar, that they will sit abroad bare-faced hard by you when they are empty; yet if you shall absent your self for trial, you shall find when you come to them again they will be unquiet, and by bating and striving do themselves much harm, if they be full.

§. VI.

How to weather your Hawk.

THE Hawks are much subject to heat, and therefore much addicted to weathering and bathing, and will almost never refuse the water. You may boldly set abroad these Hawks at any time of day unhooded to take the air: For in regard of their fondness of, and familiarity with the man, they will take no occasion to bate, thereby to hurt themselves when they are full-gorged. But

But your *Haggard* Falcon, if you intend to weather her, you must do it in the morning, or else in the evening before she be fed, also you must remain close by her with meat clean and ready drest, to take her to your Fist withall. But I rather advise all Falconers to weather her in her Hood, which can do her no harm, but is rather a means to prevent her bating and striving, by which her spirit and courage is taken away.

§. VII.

When it is convenient to set down, and leave flying of your Haggard.

ABout Lady-day, or somewhat before, is the time when these *Hawks* leave ours and other strange Countries. They begin to draw together, and to dispose themselves thereunto a month before: The reason is, because at that time of the year being moved by their lust they repair to their breeding places. Therefore the old *Haggard* must needs then be set down, and fed up with hot and bloody meat: The intermewed *Haggard* is more able to resist the course of nature, being not so violent in her, therefore you may fly her somewhat longer. The *Passenger-foar-Falcon* may be flown a month longer than any of the other. All of them will upon a small occasion be apt at that time to fly quite away; the inclination to cawking and procreating Young, being then so strong in them, as to deface and obliterate, or at least over-rule all artificial impressions of subjection and obedience.

§. VIII.

How to diet and prepare your Hawk for the Mew.

You must beware, when you purpose to feed up your *Hawk*, and put her in flesh, that she be not her own carver in her diet, and that you do not give her too great a gorge your self: For if you do, it is ten to one but she will over-feed, and surfeit of the same. The reason is because she wants exercise to digest it. Your best way therefore is, to keep your *Hawk* all the flying time as clean as you can; and at her setting down, keep your wonted course of feeding twice a day, and as near as you can with hot and bloody meat, and no more in quantity than you find her well able to endure and put away: And if after a week or fortnights space you find she is mended, then you may be bold to begin to feed her once a day; and if it be possible at first let her have young *Pigcons*: But if you give her old birds, her first gorges must be less. Thus observing how she mends by feeding once a day, and the eagerness of her stomach doth abate, you may order her accordingly, and you will find her shortly raised in her flesh, and settled in her health, and fit for the Mew.

§. IX.

How to order your Hawk while she remains in the Mew.

Before you put her in, be sure she be free from Mites and Lice: Which else will increase upon her there, and hinder her thriving.

Also take off her old Jesses, and put her on a pair of new and strong ones, that may last till the time of her drawing, that you be not forced to hold her, and strive with her too long, to heat her when she is in the prime of her grease, which may do her much harm.

Keep your Mew always sweet, and clean with sweeping.

Observe how your *Hawk* thrives by her castings and mutes, for so you may know how to diet her, continuing or altering her usage accordingly.

You must not fail to let your *Hawk* have fair water always standing by her, which must often be shifted.

Be sure never to let her be without stones lying by her in gravel. He advises also to gather up the stones she casts, and wash them, and lay them for her to take again: But I suppose it would be better to give her fresh stones. For those stones which she hath taken and cast up, are by mutual attrition in the stomach worn smooth, and so become less fit for the grinding of the meat, which is the reason why she casts them up. Wherefore (as we have noted before) Poultry before they swallow stones try them with their tongues whether they be rough or not.

That

That meat which you do kill for your *Hawk* with a Piece be sure to search, and cut out the black and bruised flesh, which proceeds of the Gunpowder. For there is no Gun but after one shot or two, (especially in wet weather) sends forth the shot as black as ink.

§. X.

How to take your Hawk from the Mew, inseason her and make her ready to fly.

When you draw your *Hawk*, be careful not to strive long with her, or heat her by struggling and bating, but with all possible expedition set her down upon a *Pearch*, to rest quietly, till her anger and turbulent humour be allwaged; and so let her sit among company, and in their hearing, without any occasion of disturbance as near as you can. Then when you think it convenient, take her gently upon your *Fist*, and carry her up and down, stroking her with a feather lightly and gently: And if you perceive her begin to stir or grow unquiet, let her down again, and thus use her until by degrees you have drawn her to some reasonable familiarity, and that she will begin to feed: Then give her more carriage, and use her to it more and more, and be sure still to keep her as quiet as may be, and by all means prevent bating. For there is more danger in some one *Hawk* that is to be reclaimed and inseasoned from the Mew, than in many other *Hawks* that have been newly taken in *England*, or from the *Cage*: The reason is, because by reason of her ease and full feeding, and want of exercise in the Mew, no crammed *Fowl* will be more fat and full than she, and so she will be apt to receive much harm by bating or any sudden heat: Whereas the wild *Hawk*, coming from the labour of her body, and exercise of her Wings: And the *Cage-Hawk* being tossed and tumbled in her voyage, are seldom over-fat, and so in less danger of over-heating themselves by bating or otherwise.

When you have brought her to eat, you must feed her twice a day, and so order and diet her continually, and it must be with new and good meat, which you must dress and wash clean, wringing out the blood with fair water, that so she may sooner come to a stomach: And for the quantity thereof let it be as much as the Wing of an old *Dove* at once, or as you shall find her, to put away the one meal, and make her self fit and ready for the other. And for the first week or ten days after she begins to feed, give her neither casting nor stones, but the week after give her half a dozen stones every night, after she hath put away her supper from forth her gorge, which you shall find she will cast you up again in the morning very early. The third week approaching you must give her every night a casting, continuing your former manner of diet till your *Hawk* be flying, and all her flying time, only adding unto her meals somewhat in quantity, and forbearing to wash altogether so hard, with respect to the mildness and hardness of the weather, &c.

Then prepare your self to lure her, and let her exercise and have the benefit of her Wings.

If you give your *Hawk* a piece of Flannel or Cotton for casting, he adviset that it be perfectly clean washed; and that when you give the lightest and easiest suppers, and some Plumage with it, but never upon a great gorge to the soundest *Hawk* that is. Also in a morning, when your *Hawk* makes a loose and unwrapped casting of Plumage, it is good to give a little knot with stones, to bring away loose or straggling feathers out of the Pannel. Many found *Hawks* will never brook a woollen casting; and therefore my Author advises not to give your *Hawk* any such, unless it be sometimes for trial, but to give her only casting of Plumage; and so you shall be sure to preserve and keep her safe, and in continual case to do her business.

Here my Author enters into a long discourse about giving of stones, giving many reasons why it is better to give them over night than in the morning; which, because I am not of his opinion concerning the use of stones, and think that they may be indifferently given either at night or in the morning, when the *Hawk* is willing to take them, and that it matters not much how long she keeps them, I shall omit. Only I shall set down some of his experimental observations. I have (saith he) seen a *Hawk* in the time of her flying, that hath taken a dozen or more stones of her self in a morning, and hath kept half of them till next morning: The same *Hawk* when they were given her would not miss at her feeding time, or at the sight of meat to cast half of them, and keep the rest till the next day. This he observed many *Hawks* to do.

H h h

Another

Another Hawk when I came into the Mew with her dinner did cast up some few stones at the sight of the meat, and when she had eaten up the same (being a young Pigeon) she presently took above a dozen more, which she kept till the next day. The like story he relates of a *Tarcel gentle*, that after he had eaten a whole young Pigeon took presently fifteen or sixteen stones, and made it something late the next day before he cast them. This *Hawk* also at the sight of his meat would not fail to cast some of his stones.

No such Physic (saith he) for a Hawk as to give her stones in due time. Here he takes a great deal of pains to prove that stones do not, according to the commonly received opinion, cool, but rather at present heat, their use being in his judgment to melt and waste the glut and fannels, and to empty and evacuate those gorgitive and stuffing humours, and so to infeed and make her clean. *But this I omit, because, as I said before, I think the main use of the stones is to assist the stomach in comminution and grinding of the meat, thereby causing a more speedy and perfect concoction, and so they conduce much to the preservation and recovery of health; the stomachs not performing its office well being the foundation and original of most diseases in Hawks and other animals, such an error in the first concoction is not amended in the subsequent.*

One remarkable observation he hath, which may seem to argue that stones have a purgative quality in them, which is this. That upon giving stones after forbearance a while, a Hawk will oftentimes at her beginning to cast before the stones, in the midst, and at the end of them, gush out abundance of waterish, and yellowish greasie slime and glut from forth her body: Which before, though she had casting daily, flowed not forth.

He advises at the beginning to make your Hawk perfectly clean, and so to keep her without pampering with great meals, and to have her empty, and with a good stomach when she flies: For if she be flown full, it may endanger her life; and besides, she will never fly with regard and attention to her Keeper, if her stomach be not perfect. For proof whereof, Take any young Hawk out of the Nest (though newly disclosed) and breed her up as familiarly as you can devise: Yet when you shall come afterwards to fly her, she must be altogether governed by her stomach. For let her fail of that never so little, and every puff of wind will blow her from you; nay, if there be no wind stirring, yet she will wheel and sink away from him and from his voice, that all the time before had lured and trained her up. Contrariwise, if it be his hap to find her again when she is hungry, though she would starve before she would prey for her self, yet then will she own him or any other man: Nay, she will be ready to take his Cap from him before she will either leave or lose him.

Note well, that what shew of cleanness soever you find in your *Hawk* by her casting, mutes, or otherwise, although you have taken never so much pains with her, by casting, clean feed, and stones to purge and cleanse her inwardly; yet will she not be perfectly infeed till she come to the exercise of her Wings, and labour of her body, after which she will break grease, and by degrees infeed thoroughly. And be sure that her labour at first be not immoderate, for if it be, it will ingender grief. Also you must give her liberty by degrees to stir her Wings, and use her body, that there may be no heat excessively taken, until she be thoroughly infeed, and then she may be weary with flying, but she will never take harm.

§. XI.

How to alter some ill qualities and conditions in a Falcon.

YOU shall sometimes meet with a *Hawk*, that when you have well lured her, and given all the good content you can devise to her, yet upon the least scope and liberty that shall be offered, she will not tarry with you, but go her way. To reclaim her from so bad a condition you must take this course.

Abate her pride somewhat, yet with reason and respect to the weather. Then get you a *Make-hawk*, and taking a fit hour in the Evening, upon a convenient and easy place, and one couple of Fowl with your *Make-Hawk* flown and stooped once or twice, or as you see cause in managing your flight to your best advantage in landing, but when she is coming for the last to kill it overland, be sure to stand under the wind with your *Hawk*, and let her see the Fowl overthrown, and go in to the quarry; and if you perceive she flieth in with a courage, and seizeth with love and heat on the Fowl, make in apace and cross the Wings of the Fowl, and make that fast,

suffering

suffering them a while to take their pleasure together; which done with meat cleanly dressed take up your old *Hawk*, but gently, lest you fray your young one, and let her have the Quarry to herself, and take her pleasure thereon, with your own help on your knees to please her, and beware she take no pill or pelf to glut her withal, and so reward her with *cleavly feed, giving her supper unto her as she fits upon the Fowl: Use her thus three or four times together, but let it be with good meat, clean washed and well dressed from your hand.

When you have used this course, at your next coming to the brook, let your *Make-Hawk* be flown, and when she hath stooped and is wrought to her place again, at your next shewing, let your *Hawk* see the Fowl thrown in, and fly for the killing of it herself with the other *Hawk*. Mark the manner of that flight; For if she hotly and kindly entertains the advantage offered her, and with attentive eagerness follows the Fowl she saw thrown in, flying round upon that and your self, and with good hap enjoys the Fowl she may make you a good *Hawk*: But if this course stay her not, there is no hope of her for the River.

But to enter a gently and lovingly disposed *Hawk*, having a couple of Fowl that lie fit for your purpose, throw off your *Make-Hawk*, and when she hath once stooped them upon her point or before at the setting in of the Fowl, let in your young *Hawk*: If she fix her Eye on the other *Hawk* and work her, then need you not doubt, but suffer her to fly till she hath almost reached the other, but then be sure to shew the Fowl; and then if she stoop with the other *Hawk*, and work it again with her, then if it be possible let them kill it at the next down-come. For the only content you can give to these kind of *Hawks* is to let them have their desires speedily, before they be weary, while their courage is in them. For nothing puts a young *Hawk* sooner out of love with the man, and drives her sooner away, than suffering her to fly too long before she be served.

Helays great stress on this as an excellent rule, That in the time of her making no scope be given to the *Haggard*, neither to fly high nor wild, but that she be held down and near to you.

CHAP. VII.

Of the Ger-falcon.

THE *Ger-falcon*, *Turbervile* saith, is of a fierce and hardy nature, and therefore difficult to be reclaimed, but being once won, proves an excellent *Hawk*.

Latham saith, that *Ger-falcons* are for the most part very kind and loving *Hawks*, and will suddenly be reclaimed and made to love the man. Their Tereels or Males are called *Jerkins*. These *Hawks* do not fly the River, but always from the Filt they fly Herons, Shovelers, forked-tail'd Kites, &c. In going up to their gate they hold not that course which other *Falcons* do. For they climb upon the Train when they find any Fowl, and as soon as they have reached her, they pluck her down, if not at the first, yet at the second or third encounter. The *Haggard* of this kind is most commendable, and easiest to be made for any pleasure. To reclaim and make her fit to be set to the Lure, you must take the same course as is prescribed for the *Haggard* flight Falcon.

When she shall come to be lured loose, then would the first of all be taught to come unto the Pelts of Hens, Herons, or any such like thing, so it be dead; for thereby she will not be over-hot or eager of it, neither must you suffer her to touch any part of the flesh, to draw her love from your voice and your hand, but to spend only her time on it in pluming. All this time you must be close by her, and on your knees using your voice to her, with her dinner or supper clean dressed and washed, giving still unto her some part thereof in bits with your hand, that from thence only she may be satisfied, and her whole delight be in that, accounting the other in her foot but as a stand or means to stay her by you, while she receives her full reward at your hands. And in using this course often to her, she being a *Hawk* of never such strength and ableness to carry, it will in the end so reclaim and win her to your self, that she will quite forget the same: And after if you list to train her with Doves, she will not carry one feather from you, but draw towards you, and ever desire to have her content at your hand.

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It is a special point in a Falconer to take good time at the first making of his Hawk, and not post her to another thing till she be perfect in one.

Before you spring her up any Doves, it is meet you let her kill half a dozen at your Lure, close by your foot, having a pair of short Creances at your Lure: For it may be at the first seeing of the Dove to stir and flutter, she may come roylingly to twitch or take it away, so far as she is able: Which if she should do, you have a remedy by restraining her gently with your Creance, so that there shall be no offence committed: Then ought you to get gently into her, and as before said with bits of meat cleanly drest and bestowed on her you shall please her at the full, and take her to the Fift again.

The Heron and the stately flight and mountee thereto is the thing for which these Hawks are most desired and accounted of: For which purpose your intermew'd Hawks are fittest and most esteemed. *N.B.* Remember to be favourable to them the first year of their making, [and not to put them to any toil, but to train them gently with such Herons as you are sure cannot go from them, nor cause them to labour much before they master them,] and ever after at the drawing: And take good time with them in the insecming: For these times as yet have ever shortned their lives and destroyed them. No man (he saith) can make one of these *Hawks* from the Mew ready to be lured under six weeks at the least, but he shall hazard her life if she take any heat at all. They are prepared for the Mew, and mew'd in like manner as the sleight Falcon. Let her have in the Mew Sods or Turfs to stand on, and those often shifted, that they grow not too hard and dry: For she is a very heavy Hawk, and very subject to infirmity on the bottom of her feet. He disallows mewing of them at the stock, and approves of mewing them loose. She ought also to have very often given to her Plumage, bones, and stones, to purge and cleanse her.

Turbervile saith, they covet to keep their castings long through sloth; and therefore advices not to give them casting of Cotton, but of Tow, Hazel or hard things.

When she is mew'd, *Latham* saith, that you ought at the least three weeks before you take her to your Fift, to insecm her with waite meat and stones: For then is the danger of shortning her life, whereas by good ordering they are as hardy as the Lanner, and will last as long: He saith, he hath known one hold out and continue her goodness twenty years.

CHAP. VIII.

Of the Lanner.

THe Lanner is not over-dainty of her feeding, but can better brook gross or coarse diet than any other Falcon.

Lanners of all Hawks are fittest for young Falconers, because they will hardly take surfeit, and seldom be over-flown, or melt their greale.

Mew'd *Lanners* [and *Sacres*] are hardly known from the Soar-hawks, because they do not change their plume.

Turbervile saith, that with this Hawk you may fly the River. *Latham* saith, he hath not known any Lanner made for the River, yet prescribes a way to make them.

They are very slothful and hard-metled, so that unless you keep a hard hand over them they will do little good.

You shall not lightly see a Lanner lie upon the Wing, after she hath flown to mark, but after one stooping she maketh a point, and then waits for the Fowl after the manner of the *Goshawk*, she is so slothful and dull; and therefore doth commonly use upon the queisting or call of the Spaniels to attend very diligently, and so to prey at her pleasure. As the *Eyass* of this kind exceeds other Hawks in gentleness and love to her Keeper, so the *Haggard* passes all others in wildness, and is very hard to be reclaimed. She must be managed and ordered in all respects like the *Haggard* sleight Falcon.

The *Ramage Lanner* is also a coy Hawk, and must be ordered as the *Haggard* Falcon; only her diet must be with hard-washed meat and stones more or less as you shall find her natural inclination.

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Above all you must use your utmost skill and pains to keep her from dragging or carrying any thing from you; which ill quality no Hawk is more subject to than she. To prevent which, first you must beware, that if she but once only knoweth the Lure, that you lure her no more than once at one time, though you take the more time to make her: Else you hazard the spoiling of her. For as soon as she knows the Lure she will fettle her love on it, and desire to hold it, and be loth to be taken up from it to be lured again; and out of fear lest you should deprive her of it, will quickly fly you, and drag and carry it from you. Secondly, During the time of her luring and training let her have her reward at your hand for the most part in bits, reserving some small quantity to take her to your Fift withal. Thirdly, All this while have your Spaniels by you as she is on the ground: For these be Hawks of all other most coy and fearful to have any Dogs come near them: And therefore at her first entring you ought to have but few Dogs, and they such as be both cool and gentle, till she be well entred and acquainted. For if she should chance to take any sudden fright with a Dog, she would never abide them again: And so she will be for ever married; for being able to carry away her prey, whenever she shall have a Partridge in her foot, she will suffer neither Man nor Dog to come near her, but carry it away, and prey upon it. Which if she do but once, it is as good as an hundred times, for she will never be reclaimed from it.

Of the Merlin.

She is a courageous and hardy Hawk, flying with greater fierceness and more hotly than any other bird of prey; so that she will venture to fly the Partridge, Heath-powt and other birds bigger than her self, and pursue them eagerly even into Villages and Towns.

They are such buise and unruly things, as oftentimes they eat * off their own Feet * This my Author upon his own experience denies. [†] For the Falcon.

A *Merlin* may be made both to the Fift and to the Lure. When you have made her to the Lure in manner † before described, make her a train with a *Partridge*, or other livebird: If she foot and kill it, reward her, suffering her to take her pleasure on it. This done, fly her at the wild *Partridge*, if she take it at the first flight, or if she take it at the second flight, being retrieved by the Spaniels, feed her upon it with a reasonable Gorge, cheering her with your voice, that so she may know it. If she prove not hardy at the first train, prove her with another before you fly her at wild Game. If at the second train she prove not hard, it is a sign she is nothing worth.

It is very good sport to fly with a cast of *Merlins* at the *Lark* or *Linnet*; for besides that they love to fly in company, it is pleasant to see the one climbing to the mountee above the Lark, and the other lying low for her best advantage, the one striking the bird at the stooping, the other at her down-come. When you have found the birds go as near as you can into the wind to the bird; and as soon as the bird riseth from the ground unhood your cast of *Merlins*, and cast them to fly until they have beaten down the Lark or Linnet, and let them feed on her for their labour indifferently. He advices not to fly your *Merlin* at Cut-Larks, because they not mounting upward, but flying straight forward, they afford you but little sport, and besides endanger the loss of your Hawk.

CHAP. IX.

Of the reclaiming and marning of short-winged Hawks, and first of the Goshawk.

§. I.

Of the Goshawk, in general.

Hawks of all Creatures are most fearful of man, and the *Goshawk* as coy, nice, and hard to be dealt with as any. She may be won by gentle usage; and will as soon perceive and unkindly resent any rough or harsh behaviour.

The *Oftringer* must bring his Hawk to love and be familiar with the Sparrel. Some *Goshawks* are swift of flight, which in pursuing and catching their prey trust to the swiftness of their Wings, others fly slow, and win what they get by policy: None of them but by industry may be trained up to, and made good for somewhat.

The *Goshawk* is of a hotter temper and stronger constitution than any other Hawk; the first appears, in that her mutings are always liquid; the second, in that she is seldom troubled with those diseases, which be incident to most other Hawks, viz. to be liver-shotter, and to the Filanders. And though the *Lanner* be accounted the hardiest Hawk in use among us, and longest-lived; yet the reason is not the firmness of her constitution above the *Goshawk*, but because the *Goshawk* in time of her pride and fulness is a froward and unruly bird, and when she is infamed very prone to extreme bating (wherefore she requires more labour and attendance of her Keeper than any other Hawk) and by these extremes she often shortens her days: Whereas the *Lanner* is a meek and gentle Creature, and will seldom bate or be unruly in the time of her infaming; which is the reason she lasts longer.

§. II.

How to order a Goshawk taken from the Mew.

Because it is likely that she will be fat and full in the highest degree with rest and frank feeding in the Mew, therefore it is necessary that she be fed in the Mew twice every day with clean drest and washt meat for sixteen or twenty days before the intended time of her drawing, that she may be well infamed of her body, and have scoured forth of her pannel and guts all glut and fatness, and so she will be in no danger through her bating, strugling, or other forcible motion of her body at the time of her drawing. Then draw her, having a ruster-hood in readiness very fit for her, from which time she must be continually fed on the Filt, and have casting every night. This course with continual carriage on horse-back and on foot must be taken with her in her ruster-hood some eight or ten days longer; and then take it off, when you shall find her to be well reclaimed and infamed, and free from all danger, and ready to be called; and with diligence and pains she will be next week as ready to fly: And after two or three flights at her first entering may be put to hard flying, and she will receive no harm thereby, &c.

§. III.

How to reclaim and order a Goshawk taken from the Cage.

Few of these are so fat or full-bodied as to take harm by any reasonable bating. Give your Hawk sweet meat, clean drest, and reasonably washt, and moderate gorges of the same: By this diet you must bring her to a good stomach before you profer her casting, and then she will not be nice or curious in taking it. Let it be no more than she may well and easily swallow, and when she hath done so, presently put on her Hood, then suddenly give her one bit or two of meat to please her withal; then make a little stay, until you perceive assuredly that she hath put it down into her Pannel, which being perceived put on her Hood again, and give her a reasonable supper. By this course taken, the Hawk will soon come to be in love with her casting, and will take it without niceness in expectation of her supper.

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For my own part (saith my Author) when my Hawk is well infamed, and in flying I give her Plumage every night when I feed her up: When she rests I feed her very clean, without any casting at all, and so set her up to rest, and in the morning very early give a woollen casting, fashioned and soaked all night in fair water, which she will willingly take being used to it: And in an hour or thereabouts her appetite to her breakfast will provoke her to cast it up again. So he disapproves the giving a woollen casting at night: But if any will needs give it, then he advises it be with small store of meat, and some Plumage with it. Also he disapproves of stones given with Celandine, and castings of hazel, unless much underfized, because of their swelling. When ever he found his Hawk to dislike unnatural Cotton castings, he suddenly left them and betook himself to Jukes, and sometimes to *Hares* or *Conies* feet, the bones and wooll well broken together, which he never found to disagree with her, but always wrought to good purpose.

He condemns the giving of bloody meat, because the Hawk will not therewith be reclaimed. And therefore, saith he, the unreclaimed and unclean Hawk of this or any other kind ought to be reclaimed, infamed, and made to fly with good meat, clean drest and washt, and for these Hawks the water dried out again with a fair cloth. And this course to be held all flying time, unless there be just cause for the contrary. As to a sick and crasie Hawk, with due respect unto the eyes, or to a hot and eager mettled Hawk, as also to the foundest and hardest Hawk that is, when she shall have continual hard flying, and kills oft, you may with discretion in the quantity give bloody rewards, and three or four times in the week suppers of the same, as Pheasants and Partridges heads and necks: Always being mindful in time of rest to feed with meat clean drest, hard washt and dried again, to hold the stomach right and sharp withal, else no subjection to be looked for abroad when she is at liberty.

All the flying time, but especially when you fly to the covert, (it being then usually cold weather) suffer not your *Goshawk* to be too long fasting, for it breedeth much wind in her, and is a special means, with cold adjoynd, to take down her flesh, which at that time will not very easily be put on again. Therefore for every Hawking day provide a reasonable meal of clean-drest meat, the which you must keep in a fair cloth: Then in the morning, suddenly after she hath cast, give one bit when her Hood is on. Also if you chance to spend an hour more before you find your flight, give her another bit, and so after this manner, proportioning her meat to the time of her being abroad, that she never be over-empty, and yet have a perfect appetite and good courage to fly.

When ever you feed with cold meat you need not wash it: But I would advise you to use it as seldom as you may, for a continuance of it breeds poverty and many diseases.

Whenever you have set down your Hawk off your Filt hooded or unhooded, come not to take her up again without using your voice in whistling or chirping to her, also without some bit of meat, or a stump to please her withal; for so you shall work in her an everlasting love and desire of your coming and company.

Also when you set her on your Perch hooded, let her not know where it standeth, if she do, she will have a longing to be there, and will not rest quietly on the Filt after she is once within doors: Whereas till she be thoroughly reclaimed and flying, and till she hath been well flown, your Filt for the most part must be her Perch, and she must know no other. For these be *Hawks* that in their first making with a little rest will quickly forget what they were formerly taught, and return to their wildness again.

When she is untowardly or frowardly disposed, endure her unquietness with patience and gentleness, and evermore have some stump in a readiness to appease her anger.

In the time of her infaming and reclaiming give her not her dinner at any time all at once, for thereby you shall prolong the time of her making: For her stomach once full she will mind you no more, therefore divide it in the forepart of the day, and let her jump often to the Filt for it.

When she is first to be entred put her upon the highest pin of hunger, and then she will shew all the mettle that is in her, and when she hath once taken her prey rather die than forsake it: Whereas if her stomach be imperfect, the least occasion that may be, as the approach of her Keeper, or any other man, the appearance of either Horle or Dog, &c. will be sufficient to cause her to forsake it and go her way.

§. IV.

§. IV.

How to make a Goshawk like the Hood, that hath with ill usage been beaten out of love with it.

CARRY a Hood of some notable colour on your finger, that may well be seen and viewed by her as it hangeth there, and so as she may feed close by it for a week together, but beware you do not as yet shew it her with your other hand. But then take it gently in your other hand, and move and stir it about her meat, that she may touch it as she eats. This do another week, still letting the Hood rest on your little in her fight between feeding times. Use this course till without fear she will but thus endure it. Then you must hold your meat in the hand she sits on, and with the other hand hold the Hood by the Tassel upon the meat, moving and stirring it as though you would keep her from feeding; but it must be done softly and gently: When you shall perceive that she will strive to feed beside it, you shall hold it by the Tassel just over the meat, so that she must needs eat clean through it. Do thus so long as till you see that she will feed and search boldly through the hood for her meat, and eat it without any snatching or fear. Then as she is feeding, and doth thrust through the Hood for her meat, do you bear the Hood a little against her, and she will hood and unhood herself as often as you would have her. When she hath with your assistance put on her Hood, let her eat freely until she hath done, and take it off no more till feeding time again. In this manner, within a month and less she will be brought to hood her self with the least stump you carry about you, as often as you shall have occasion.

Practise not this till she be come to a perfect stomach, for if you do, you mar your Hawk for ever.

§. V.

To reclaim a Goshawk from the Cage.

GIVE her a fortnights carriage or more in her rufter-hood, always stroaking her with your hand or a feather. Be careful to feed clean with washed meat, for so she will be the sooner brought to a good stomach, and be gentle and well pleased to be handled. This obtained (which you shall perceive by her listening to your voice, or eager feeding) some evening wash and pepper her well. Then take off her rufter-hood, having another ready to put on: As she grows to be a little dry put on her Hood, and give her a bit of good meat upon it to please and refresh her. Hold this course to hood gently, and unhood now and then, not forgetting her reward ever after it is on, until she be thoroughly dried, and afterwards the molt part of the night: Then you may set her down bare-faced to have two or three hours rest; and be sure it be in a special warm place, and on a dry and warm Peach on high, for these kind of Hawks are very subject to take cold, and apt to have the cramp on such occasions.

When she and your self have taken a little rest, go softly to her with shew of meat in your hand, withal chirping or whistling to her, and take her gently on your Fist, and dividing her meat into several parts bestow it on her for the molt part when her Hood is put on: This will make her love and look for the Hood expecting to be fed; if she be nice in suffering your hand or the Hood to come near her head, you must seldom do it in the day time, but at her feeding, and late at night, when she will be more willing to take it.

Next teach her to jump and come to the Fist. For though other Hawks are used to come to the Lure thrown some distance from the man; yet the being a Hawk of the Fist, must be taught and used to come boldly to the hand, and without fear to seize and sit upon it during your pleasure, which she will never be brought to do with all the Art in the world, if her stomach be any way imperfect.

This obtained, let her be called a little further off, viz. twenty or forty yards at most: By dividing one meal (as I said) let her come oftentimes in a day if it be possible: Which will quickly make her perfect, that she will never check at the Fist, but will come and draw at any time of the day: Whereas using her to one hour for her meal, causes her not to come or draw till that time; which is an ill quality.

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[He wishes not to be too hasty in flying Goshawks before they be thoroughly reclaimed and taught, but to take sufficient time to teach them. And he affirmeth, that if a Hawk be too much impoverished and her flesh taken off, she will lose her spirit and mettle, how good soever she was, and will neither fly well, nor ever last healthful.]

Now it will be good time to call her loose. In doing which shun all places near Houses and Towns, to avoid the inconveniences of her being tempted aside by Poultry, Dove-houses, and such like places, which all these Hawks are subject to; and having once caught such an ill property they will seldom or never be reclaimed from it, how far soever from any Town they shall be flown: Walk therefore with her to the young Woods betimes in the afternoon, having before prepared her stomach, and there put her up into a tree, walking along from her, using your voice softly as though you had Spaniels with you, but chiefly to her in chirping and whistling: By which means no doubt she will draw and follow after you with little noise. Then suffer her not too long, but call her to your fist again, and reward her with some bit of meat, or Leg of a Pigeon, &c. to please her. Then put her up again, and by your softest voice or whistle draw her after you again. To use a loud voice would be a means to make her sit and loiter behind you so far as she can hear you, which is an ill quality: And besides, to make your Spaniels range far off, and spring out of the way far from you, which must needs be much displeasing both to Man and Hawk.

To make your Hawk familiar with your Dogs, first feed her amongst them all very oft upon your Fist: Then throw oftentimes from you among the thickest of them the dead Pelt of a Pallet or Hen in a short Cruce, that she may fly from your Fist, and eagerly chop among them, and seize upon the same, suffering her to plume a while: then take her to your Fist with a stump. This course you must use every day often, till you find that she will venture boldly among them all. She will soon perceive and understand by the Dogs giving way with fear unto her, that she hath even got the upper hand of them, and so will never fear them in the field or covert, or be beaten off her Game by them, as otherwise she would.

§. VI.

To enter a Goshawk to fly to the field.

PROVIDE three or four hand-Partridges, with a companion, and one couple of staunch Spaniels; then go into the field, having prepared your Hawk with appetite and courage to fly. Then one of you shall go near hand from the other unto some bushes or other covert, whereas he shall spend his voice to the Dogs after the accustomed manner, and using some blows with his Pole, he shall secretly let the Partridge spring as from forth the same, with such judgment in the delivery as that the Hawk may see it, crying with a loud voice, *Howe, Howe, Howe*, that she may learn to know the word of warning, when she should at any other time look about her, and be watchful at an instant to take her advantage. This done, and your Hawk flying after it with spirit, and taking it, be sure with all expedition to get in to her, that no Dog or other thing may fright her, or deprive her of it: But suffer her to plume and take her pleasure on it, and further to take blood thereon, still having the Spaniels in sight close by her. Then you must teach her to take the head in her foot, and eat it on the ground: And when she hath so done, and looketh about her, having your Spaniels by you, through the Partridges pelt (as before in her first teaching) once among the Dogs, and let her take it being in her Leath, that she may not carry it from you: And whilst she sits there and plumes make her supper ready; take her gently to your Fist, and there content her. By thus ordering and using of her, you will without doubt very suddenly have an excellent Hawk: And by all means fly her to the field all the first year, and let her not see the Pheasant at all, for that will draw her love from the Partridge, and make her give them over; being a shorter flight.

When you have thus entred and blooded her, and also killed three or four Partridges more from the mark at the retrieve, and perceive that she knows a Partridge by sight, and the accustomed terms, and will go readily from the Fist thereto; be sure, that all the fore-part of the year you let her go no more one flight in ten, near to the rising of her Game, for that will make her slothful; the Partridge being then weak,

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and the taking them easily at the sower in a short space; she will afterward remember it, and look for the same order, and without it will not fly towards the latter end of the year, but if the *Partridge* be sprung far from her, will make as if she saw it not, and fly to the next tree she meets with.

Some *Hawks* have an ill property, that when they have flown a *Partridge* hard to any covert, and take it not at the first flight, there will they sit still on the ground, and not get up to any stand for their better advantage. To amend which fault, when your *Hawk* hath flown a *Partridge*, make after her with all the speed you can, taking your *Dogs* with you by your command, and when you have found her, be sure to take her up; but not on your *Fist* by any means, if there be either hedge or tree near hand; but take her by the body or shoulders suddenly with both your hands, and throw her upon either hedge, bush, or tree, and then beat for the *Partridge*, when as it is impossible but she must see it; if it doth spring then, and she fly after and kill it, well. This course being well followed will certainly reclaim her from that fault, and teach her to rise her self; for she will quickly understand that else she shall be caught and tolt up, and also that thereby she shall enjoy some pleasure and content. This is a common and lasting fault of the *Eyes* Hawk or brancher, seldom of the *Haggard*, and therefore you need not fear frightening or angriing her by so doing.

It is in my opinion the most commendable and safe way after one of these *Hawks* is first entred, and only knows a *Partridge*, then immediately to teach her and use her to fly from forth the Hood. Often bating at *Partridges* sprung to other *Hawks* discomforts and discourages her: Besides, the will, if carried bare-faced, be very stirring and unquiet on the *Fist*, not a *Dog* can stir, or bird rise, but she will offer to be gone. Let her also sit and weather in the Hood, and never take it off but when she shall either fly, feed, bathe, or is to take her rest at night.

§. VII.

How to enter your Goshawk to the Covert.

NO man is fit to order and manage a *Goshawk* to the covert but he that hath a strong and able body, and a good spirit and courage to follow her, for in this sport, and with this *Hawk* he must altogether trust to his feet.

Here because the man cannot follow by view to succour the *Hawk*, you ought to be chary of what place you enter her in, especially that she may be there well guarded and kept from taking any dislike or offence at the *Dogs*, the which if she should do at the beginning she will never endure them again: For it is the sudden rustling of the *Spaniels* upon her, (their fight by means of the covert being obscured) that breeds this offence. The best time to enter her is early before the leaf do stir; for then the *Pheasant* flies not far. Also afterwards the nature of them is to leave the young shoots and small groves, and draw to the high and thickest woods.

Having made good choice of your place, and let your *Hawk* go unto her flight, you must be sure to command your *Dogs* to you till you have found her; then if she have killed, you have your desire; if not, and that you chance to find her on the ground, (as it may well be you may, for many of them at their first entering will be very hot and eager of that sport, and oftentimes seeking for it on the ground) if there be any tree near hand, that she may well see from it, put her up into the same, otherwise keep her on your *Fist* and beat for it again. Then if she do fly and kill it, you must be sure to make stay of the *Dogs* till you have found her: Which done you shall get gently in to her, and if you dislike the place for the uneasiness or thicknels, draw her gently to another more open, where she may with more ease and quiet enjoy her prey; and there suffer her to plume and take her pleasure on it a while. Then call your *Dogs* to you, and walk and stir gently about her, with some moderate rustling and bustling in the bushes, the better to acquaint her with the same noise. Then when you see it convenient stoop to it on your knees, and rending the Chaps give her blood in the throat, where it will issue abundantly, to her great content. Then covering the body with your hat, pluck of the head, and give it her in her foot, to eat on the ground: And having your *Spaniels* close by you, when she hath done, and beginneth to look about her, throw the *Pheasant* as it were in their very mouths, that she may, together with some words of rebuke from your self, make them give way with fear unto her, yet drawing them into her sight again, so long to remain as she is on the ground, and till you make ready her supper. And when you see the

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hath taken her sufficient pleasure, exchange that artificially with her, and let her eat it on the ground where the quarry lay, only reserving some little thing to take her to your *Fist* withal: And then put on her Hood, not forgetting to bestow some reward on her afterward, which she will be well pleased withal.

To make your *Goshawk* with boldness take a *Pheasant* from the Pearch, before you offer to fly her thereto, provide a young Capon or brown Pullet, and take it with you to the Wood, and when you call her to her supper, as she is drawing and attending after you, having a Pole fit for the purpose provided, call your *Spaniels* about you, to make them bay, and suddenly breaking the neck of the Poultry, lift it up on a bough, so high as the *Hawk* may well have sight of it, there stirring it, and withal crying, *Abay, abay* to her: At which noise, and seeing it flutter, no doubt she will come in, and pull it down: Which if she shall do, be sure that the *Dogs* may with some rebuke from your self, make way for her descending, and then suffer her to plume and take her pleasure thereon, &c. as was before directed: And in using this course but a while, she will become so bold and venturous, as that the *Pheasant* shall no sooner go to Pearch, but she will have him by the ears, and pull him down.

By threatening words and blows, with reason, you may bring your *Spaniels* into such subjection, as to trust them alone with your *Hawk* in your absence: taking care there be no strange *Dogs* among them: For one strange unruly *Dog* is sufficient to mar all the rest, and the *Hawk* too.

Be careful to enter your *Goshawk* first to the *Cock-Pheasant*, for the veriest dastard that is will kill the Hen; which if you enter her first to, it may be afterward with all your Art and Skill you shall never force her to fly at the *Cock*. If you find that at first she is afraid to buckle with him, then with two or three days rest prepare her stomach soundly, and put her to him again.

§. VIII.

Of the Haggard-Goshawk.

THIS being the wildest *Hawk* of all, and so requiring more labour, care, and attendance in her reclaiming and perfect making than any other, he advises not to deal hastily with her by peppering, watching, and the like: For many *Hawks* have so been spoil'd and lost; their bodies being unfit for such sudden changes.

It is the nature of these *Hawks* when wild to feed on their prey in covert places, where they may not be descried by such other birds as love them not: Wherefore also being reclaimed, whensoever they take it in any Plain or Champain place, they will be apt to carry it to the next harbour or covert: To reclaim her from this ill quality you must take this course. Though you do call and draw her along after you by your chirping and whistle through the thick and covert places, yet do not there take her to your *Fist* to be fully satisfied, but let her still wait on you, till you come to some plain place, and there entertain her to the *Fist*, and let her feed a little thereon, then put to her Leash, and let her eat the rest on the ground close by you, and having reserved some stump, take her to the *Fist*. Remember that you sometimes stoop gently on your knee, and quietly and softly convey some bits unseen afar off to her, that she strike not at your hand with her Talons, &c. Thus doing daily with gentle usage so long as you call her, you will embolden her, and make her so familiar as never to offer to carry any thing from you.

When she kills, be sure to get in gently to her, having before provided her a meal ready dress'd, and as she sits on the *Partridge*, bestow the same on her in bits with cleanly conveyance, which will prolong her time in pluming, and stay the sharpness of her appetite, and desire to feed, which she must not do, for it would cause her to love the Bird better than your self, and to be loth afterwards at any time to be bereaved of it, and thereby take occasion to carry it from you, hoping to enjoy it to her self more quietly and secretly: Whereas this course will so please her, and draw her love so certainly to you, as she will never after offer to carry one feather from you. All this while give her no blood at all, but with some reversion take her to your *Fist* again. By this means she will never break the Prey so long as there is one feather left on it, but still attend for your coming, and to have a reward only at your hand. When you have well nuzled up and inured her herein, afterward when you find her with a *Partridge* in her foot; then after a good time spent in pluming, take off the head and

iii 2 neck,

I speak this
by experience
and on my
credit,

neck, and give it unto her with the most part of her supper together, and so take her to your Fift.

He prescribes how to teach a *Goshawk* to fly to the Wild-duck, which is by providing three or four hand-fowl, and letting her fly and foot them out of your hand one after another, day after day, and letting her plume and be well rewarded on them: And afterward getting another like bird, and letting a companion carry it into a close place or plump of bushes, and there throw it up in sight of your Hawk before prepared with a good stomach, &c. *In like manner he teaches, how to enter a Hawk to the Rook, Heron, Wild Goose, Mew, &c. with a train-Rook or two, &c. which who desires to be particularly informed in, may consult the Author.*

§. IX.

Certain Observations for an Ofsreger in keeping a Goshawk.

A *Goshawk* that was good in her soorage, many times proves worse after mewing: Because in her soorage she was not cherished to make her take delight in her flight. For the chief skill of an *Ofsreger* consists in coying and cherishing his Hawk, so as she may take pride in her flight. Wherefore it were good at her first entering to have always a train-Partridge in his Bag, to serve her withal if need be, and so win her love.

Ply your Hawk with Tiring and Plumage morning and evening; for that will open her head, and cast out the moist humours, wherewith *Goshawks* are naturally troubled. Let her Tiring be a Rump of Beef, or the Pinion of a Wing, or a Chickens Leg, given by the fire, or in the warm Sun, which will not only open her head but keep her in exercise.

Give her every night casting either of feathers or Cotton, and in the morning mark whether it be wrought round or not, whether it be sweet or not, whether it be moist or dry, and of what colour the water is that drops out of it: For thereby you may judge in what case your Hawk is. You must also have regard to the mewts, whether they be clean or not.

In Winter and cold weather fet your Hawk warm, in some place where fire is made, and roll your Pearch with Cotton, or some such like thing. Set your Pearch far from the wall, that your Hawk hurt not her feathers when she bateth. If it be not cold, fet her every morning in some place where the Sun hath power for an hour or two.

Let no Hens or Poultry come near the place where your Hawk shall perch.

In the Spring offer your Hawk to the water every week, or else she will soar away when she fleeth, and make you seek her. If any time she bathes of her own accord after her flight, if it be Winter, go presently to the next house, and weather her by a fire with her back to it, and not her gorge, for that would make her sick: Likewise dry her if you have carried her in the rain.

Keep her lusty and high, and yet her stomach so sharp, that she may fly eagerly. The plucking down a Hawk mars her, and makes her cowardly; and liable to sickness and infirmity.

Keep your Hawk clean, and her feathers whole, and if a feather be broken or bruised imp it presently.

The first year it is best to fly your *Goshawk* to the field, and not to the covert, for so they will learn to hold out and not turn tail in the midst of their flight: And when they are mew'd *Hawks* you may make them do what you will; it is better to let them be a littleramage than over-manned.

Her feeding is best on hot meats: And if you would breed her to kill great fowl, make her trains thereof: And if you would have her continue those flights never fly at less, for that will take her off from them and spoil her.

If you would make her to fly with a Dog to assist her, feed her with great fowl, and your Dogs with flesh tied under their Wings. If you train your Hawk with them, reward her upon the train, and your Dog with her: This will make them acquainted together. Thus continue doing till your Dog thoroughly knows his duty: And be sure to keep your Dog tied up, for if you let him go loose, it will spoil the best Dog that is: And never give him a reward but when he makes in at such Fowls to rescue the Hawk.

CHAP. X.

Of the Sparrow-hawk.

The *Sparrowhawk* (saith *Latham*) though a demy-creature, yet for her spirit and mettle is worthy to march in the best company: Nay, there is no better Hawk than she, if she be kept, as she ought to be, lusty and strong. Besides, he that knows how to man, reclaim and fly a *Sparrow-hawk*, may easily know how to keep and deal with all other Hawks.

And herein lieth an excellency in the *Sparrow-hawk*, she serves both for Winter and Summer with great pleasure, and will fly at all kind of Game more than the *Falcon*. If the Winter *Sparrow-hawk* prove good, she will kill the *Pie*, the *Chough*, the *Jay*, the *Woodcock*, *Thrush*, *Blackbird*, *Fieldfare*: *Latham* adds the *Rook*, *Mew*, *Lapwing*, *Ring-dove*, *House-dove*. To be kept strongly in the Hood and flown from it, she is a most excellent Hawk, and will kill more *Partridge* in one day than the best long-winged Hawk will do in two.

Her diet should be of the daintiest meat, unless in times of rest, and then also well washed and dried again, especially if she be mew'd.

Against the is to fly she must be prepared with a short cut, to put a perfect edge upon her, and then she will fly after the best manner. Also she should not be flown in the Morning, unless she be prepared over night with a short and clean supper for the purpose.

Likewise you ought to have always about you a little box full of fresh Butter, mixt with a little Saffron and Sugar-candy, to give with her meat now and then; or let her eat it out of the box: Which she will do with great delight, and it will keep her head evermore loose, and in good temper, and also prevent the Cray, and keep her proud and full of spirit.

For the *Eyas* or *Nyas* Sparrow-hawk (which is of greatest difficulty to bring to perfection) you must first feed her in some cool room, which hath two Windows, the one to the North, and the other to the East, which must be open and barred over with Laths, not so wide for a Hawk to get out, or Vermine to come in: Strow the Chamber with fresh leaves, and do in every respect to this Room, as was ordered for the mewing of the *Falcon*.

You must feed your *Eyas* with Sparrows, young Pigeons, and Sheeps hearts. Whilst she is very young and little, you should cut her meat, or shred it into small pellets, and feed her twice or thrice aday, according as you find her *endew* it or *put it over*.

When she is full summed and flieth about, then give her whole small Birds, and sometimes feed her on your Fift, suffering her to strain and kill the Birds in your hand; and sometimes put live Birds into the Chamber where she is, that she may learn to foot and to kill them; and let her feed upon them in your presence: By this course you will not only *neal* her, but take her off from that curvy quality of hiding her Prey when she hath seized it, a natural property belonging to all *Eyals*. Likewise every morning go into the Room, call her to your Fift, whistle and use such terms as you would have her hereafter acquainted with. When she hath put forth all her Feathers and is full summed, then take her out of the Chamber, and furnish her with Bells, Bewets, Jelles, and Lines.

It will be altogether requisite to feel her at first, that she may the better endure the Hood and handling: And let it be a Rufter-hood, that is large and easie, which you must pull off and put on frequently, stroaking her often on the Head, till she will stand gently.

In the evening by Candle-light unfeel her, giving her somewhat to tire upon, handling, and stroaking her feathers gently, hooding and unhooding her as often as you think fit.

Before I proceed any farther, I shall inform you how to feel a Hawk after the best manner. Take a Needle threaded with untwilted Thread, and casting your Hawk, take her by the Beak, and put the Needle through her Eye-lid, not right against the Sight of the Eye, but somewhat nearer the Beak, that she may have liberty to see backward; and have especial care that you hurt not the Web: Then put your Needle through the other Eye-lid, drawing the ends of the Thread together, tie them over the Beak, not with a freight knot, but cut off the Threads near to the end of the knot, and so twist them together, that the Eye-lids may be raised so upwards that the

Hawk may not see at all, but as the Thread shall slacken, she shall be able to see backwards only, which is the cause that the Thread is put nearer the Beak.

When your *Eyas* is well won to the Hood and to the Fift, let her kill small Birds thereon; then call her two or three days or longer, till she will come far off; then take a live Pigeon tied by the foot with a Creance, and stir it till your Hawk will bate at it and seize it, but not far off, that you may quickly help her at the first, lest the Pigeon struggling with her she prove too strong, and so discourage your young Hawk: Then let her plume and foot her, and feed her thereupon, whistling the while, that she may know it another time: Then hood her, and let her plume and tire a little.

You may use her to Trains of Chicken and Quail: And when she will seize readily by often Training, ride out with her in the morning into the Fields, where calling your Sparrow-hawk to your Fift, and giving her a bit or two, go with your Spaniels to seek some *Beavy* of young Quails, advancing your Fift aloft, that your Hawk may see them when they spring, flying her at advantage: If she kill, reward her, &c. if she miss, serve her with a Train of a Quail.

Let your Dogs hunt on your right hand when they range, but especially when they *quest* and *call*, to the end you may the better cast off your Hawk. When your Hawk is thoroughly entred and well *nouzled*, you may then hold your hand low, for she will now bate at the *Whurr*: But whatever you do, have a quick eye and a good regard to the Spaniels, not coveting to be too near them, but a little above them, that you may let your Hawk fly coasting at the advantage when the Game springeth.

§. II.

Of the Brancher, Soar, Mewed, and Haggard Sparrow-hawk.

HAVING spoken of the first kind of Sparrow-hawks, *viz.* the *Eyas*, the other four in the title of this Chapter must consequently be discoursed of.

I shall give you but few instructions, for in effect the same precepts that serve for the *Eyas* will serve also for the *Brancher*, *Soar*, *Mewed*, and *Haggard* Hawks; only this, these four last require not so much pains to be taken to make them know their Game as the *Eyas*, because they have been accustomed to prey for themselves.

Above all things the Falconer must take them off from their ill custom of *carrying*, and that may be done by serving them with great Trains, whereby they will learn to abide on the Quarry.

Be very mindful of *coying* them as much as you can, for they will remember a kindness or injury better than any other Hawk.

If the Hawk be newly taken, and will not feed, then rub her Feet with warm flesh, whistling to her, and sometimes putting the flesh unto her Beak: If she will not yet feed, rub her Feet with a live Bird; if at the crying of the Bird the Hawk seize it with her Feet, it is a sign she will feed; then tear off the Skin and Feathers of the Birds Breasts, and put the Bird to her Beak, and she will eat.

When she will feed upon your whistle and chirp, then hood her with a Ruffer-hood, and feed her betimes in the morning; and when she hath endewed, give her a Beaching in the day-time, and every time you hood her give her a bit or two; at evening give her the Brains of a Hen for her supper: and in every thing else order these Hawks aforesaid as you do the Falcon and the rest.

§. III.

How to mew Sparrow-Hawks.

SOME use to put their Sparrow-Hawk into the Mew as soon as they leave flying her, cutting off both her Bewets, Lines, and knots of her Jesses, and so leave them in the Mew till they are clean mewed.

If you will have your Sparrow-Hawk to fly at Quail, Partridge, or Pheasant Powt, then you must draw her in the beginning of *April*, and bear her on the Fift till she be clean and thoroughly ensnared.

Others keep their Sparrow-Hawks on the Peach until *March*, and then throw them into the Mew, peppering them for Lice if they have any. Her Mew should be a Chamber aloft from the ground, eight or nine foot long, and about six foot broad: Her Windows and Peaches must belike the Goshawks.

Her

Her Mew being thus provided, in *May* go in to her in an evening by Candle-light, and taking her up softly, pull out all her Train-Feathers one after another: This shall make her mew the faster, especially if you feed her with hot meat and Birds, observing a certain hour to feed her in.

Once in fourteen days let water before her in the Mew: If you perceive the hath any Feathers or Down which stand staring upon her Back, sitting as if she would rouse, then let her water sooner. If you put water by her continually, it delays her Mewing; and to keep it always from her catch her to mew her Feathers uncleanly: But water once in a fortnight is the best medium for her Mewing between those two extremes.

PART II.

Of Diseases and dangerous Accidents incident to Hawks, and their several Cures.

IT is necessary for a skilful Falconer not only to know how to man, reclaim, keep, fly, imp, and mew his Hawks, with other things pertinent to that purpose, but also to know their Diseases, with the proper Cures of them, and other Accidents frequently befalling Hawks, both in their Flights and otherways.

Before we shall characterize their Maladies, and prescribe rules for their Cures, it will be requisite to tell you that Hawks, as well as men, (which seems somewhat strange) have four complexions, the true Indicators of their natures: And as in man his natural Complexion and Constitution is known by his Skin, so in the Hawk is the Temperament and natural Disposition of a Hawk by her Coat and Plume. This opinion hath not been only averred by the Ancients, but confirmed by the modern experience of the skilful in the noble Art of Hawking. Take it in this manner.

Falcons that are *black* are *Melancholic*, and are to be physicked with hot and moist Medicines, because their Complexion is cold and dry; for which purpose Aloes, Pepper, Cocks-flesh, Pigeons, Sparrows, Goats-flesh, and the like, are very good.

Falcons *blank* are *Phlegmatick*, and must have Physic hot and dry, because Phlegm is cold and moist; to which purpose Cinnamon, Cloves, Cardamum, Goats-flesh, Choughs, &c. are very good.

Falcons *ruffet* are *Sanguine* and *Cholerick* indifferently mixt, and their Physic must be cold, moderately moist and dry, as Myrtles, Cassia fistula, Tamarinds, Vinegar, Lambs-flesh, and Pullets.

Thus much for the Complexions: now for the Diseases and their Cures.

CHAP. I.

Of Castings and Mewtings, either good or bad, according to their several Complexions and smells.

CASTINGS are of two sorts, *Plumage*, or *Cotton*: The latter is most commonly given in Pellets, which must be about the bigness of an Hazel-nut, made of fine soft white Cotton: After she hath supt you must convey this into her Gorge.

In the morning diligently observe how she hath rolled and cast it, whereby you shall know whether she be in a bad or good condition: For example, if she cast it round, white, not stinking, nor very moist or waterish, you may conclude her sound; but if she roll it not well, but cast it long, with properties contrary to the former, then she is unsound and full of Diseases.

Besides, if her Casting be either black, green, yellowish, slimy, or stinking, it denotes your Hawk to be diseased. The former Casting is remedied by hot meats; the latter by feeding her well, and washing her meats in cool water, as of Endive, &c. and give her one or two Castings of Cotton, incorporating therewith Incense and Mumy. But if she continue not withstanding in this condition, give her an upward Scowring made thus: Take Aloes pulverized one scruple, powder of Cloves four grains, powder of Cubebs three grains, incorporate these, and wrap them in Cotton, and give it your Hawk empty, having no meat in her Pannel.

Casting

Casting of *Plumage* is to be observed as the former Casting: That is, if in the morning you find them round, and not flinking, it is a good sign; but if long, limy, with indigested flesh sticking to the same, and having an ill sent, it is very bad. Here note, that by how much the more sweet or flinking the Casting is, by so much is the Hawk in a better or worse condition.

Mewts must be observed as well as Castings, in this manner: If the Mewt be *white*, not very thick nor clear, having no black spot in it, or but very little, it is a sign of the healthy constitution of the Hawk; but if it be white and very thick in the middle, though it doth not import sickness, yet it sheweth her moist meats, as the Heart of a Calf or Lamb, &c. and for two mornings after give her some Sugar-Candy, or else the Gut of a Chicken well washt, and filled with Oyl-Olive: Either of these will scour her, and make her to *flife* freely.

It is a very bad and mortal sign to see your Hawks Mewt full of variety of colours: therefore you must speedily prevent ensuing mischiefs by giving her Mummy purified and beaten to powder, wrapping it in Cotton.

If the Mewt be more *yellow* than white, then doth she abound with Cholera proceeding from great Flights in hot weather, also from much Bating. This is remedied by washing her meat in Bugloss, Endive, Borage, and such like cold waters, wringing the said meat after you have so washed it.

The *black* Mewt is a most deadly sign, and if it continue four days she will peck over the Peach and die. If the mewt so but once, there is no great danger, for it proceeds either from the Bloud or Guts of the Fowl in tiring, or else from being gorged with filthy meats: In this case give her good warm meat and Cotton-casting, with the powder of Cloves, Nutmeg, and Ginger, or Mummy alone.

If the Mewt be *green*, it is a bad sign, and denotes her troubled with an infected and corrupt Liver, or with some Aposteme, unless she be a Rammage Hawk, and then that sign holds not good. Her Cure is, by feeding her with meat powdered with Mummy; if she will not take it with her Food, then give it her in a Scouring or Casting: But if this ill-coloured Mewting continue still, then give her a Scouring of Agarick, and after that another of Incense pulverized to comfort her.

The dark *sanguine* Mewt with a black in it is the most deadly sign of all, and differs but little, if any thing, from the former *black* Mewt. A Hawk mewting after this manner is irrecoverable, and therefore it is needless to prescribe a Cure.

Lastly, The *grey* Mewt like four milk is a mortal token, yet curable, as shall be shewn hereafter.

Thus you see how requisite it is for a Falconer to observe diligently every morning his Hawks Castings and Mewtings, that knowing thereby their Maladies, he may timely find out their Remedies. Let us now proceed to their particular Diseases.

CHAP. II.

Of the Cataract.

The *Cataract* in the Eyes of a Hawk is a Malady not easily removed, and sometimes incurable, when it is too thick, and of a long continuance.

It proceedeth from gross Humours in the Head, which frequently do not only dim, but extinguish the Sight: and sometimes the Hood is the cause of this mischief.

The Cure must be effected by Scouring her two or three days with Aloes or Agarick: Then take the powder of washt Aloes finely beaten one scruple, and two scruples of Sugar-Candy; mingle these together, and with a quill blow it into your Hawks eye afflicted as aforesaid three or four times a day. This is the gentlest and most sovereign medicine of any yet I have tried. But if this will not do, you must use stronger medicines, as the juice of Celandine roots, bathing her Eyes often with warm Rose-water wherein hath been boyled the seeds of Fengreek.

CHAP.

CHAP. III.

Of the Pantas or Asthma.

The *Pantas* is a dangerous Distemper, and few Hawks escape which are afflicted therewith. It happens when the Lungs are as it were so baked by excessive heat, that the Hawk cannot draw her breath, and when drawn, cannot well emit it again. You may judge of the beginning of this Distemper by the Hawks labouring much in the Pannel, moving her Train often up and down at each motion of her Pannel: and she cannot many times mewt or *flife*, or if she do, the drops is fast by her. It is known likewise by your Hawks frequent opening her Clap and Beak.

The best Remedy is, to scour your Hawk with good Oyl-Olive well washed in several waters till it become clear and white; which you must do after this manner: Take an earthen pot with a small hole in the bottom thereof, which you must stop with your finger; then pour therein your Oyl with a quantity of water, and coil these together with a spoon till the water grow darkish, after which remove your finger, and the water will run out, but the Oyl remain behind floating on the top; thus do seven or eight times, till you have thoroughly purified the Oyl: Then take a Sheeps Gut above an inch long for a Falcon and Goshawk, but of a less length for lesser Hawks, and fill it with this Oyl, and fasten it with thread at both ends. Your Hawk having first cast, convey this Gut into her Throat, holding her on the Fift till she make a Mewt; an hour after she hath done mewting feed her with a Calves Heart, or a Pullets Leg, giving her every third or fourth day a Cotton-casting with Cubebs and Cloves. I shall only add one Receipt more for the *Pantas* or *Asthma*, and that is the Oyl of sweet Almonds poured into a washt Chickens Gut, and given the Hawk; which is of great efficacy in the cure of this Disease.

CHAP. IV.

Of Worms.

There are a sort of Worms an inch long which frequently afflict Hawks, proceeding from gross and viscid Humours in the Bowels, occasioned through want of natural heat and ill digestion.

You may know when she is troubled with them by her casting her Gorge, her stinking Breath, her Trembling and writhing her Train, her croaking in the night, her offering with her Beak at her Breast or Pannel, and by her Mewt being small and unclean.

You may cure her of them with a Scouring of washt Aloes Hepatic, Mustard-seed and Agarick, of each an equal quantity; or the Powder of Harts-horn dried; or lastly, a Scouring of white Dittany, Aloes, Hepatic washt four or five times, Cubebs, and a little Saffron wrapt in some flesh, to cause her to take it the better.

CHAP. V.

Of the Filanders.

There are several sorts of *Filanders*, but I shall speak but of one sticking to the Reins. They are Worms as small as a Thread, and about an inch long, and lie wrapt up in a thin Skin or Net near the Reins of a Hawk, apart from either Gut or Gorge.

You shall know when your Hawk is troubled with them by her poverty, by rustling her Train, by straining the Fift or Peach with her Pounces, and lastly by croaking in the night when the Filanders prick her. You must remedy this Malady betimes, before these Worms have enlarged themselves from their proper station, roving elsewhere to your Hawks ruine and destruction.

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You must not kill them as other Worms, for fear of Impoſtumes from their corruption being incapable to paſs away with the Hawks Mewt; but only ſuſpect them, that they may be offensive but ſeldom: And that is done thus; Take a head of Garlick, taking away the outmoſt rind; then with a Bodkin heated in the fire make holes in ſome Cloves, then ſteep them in Oyl three days, and after this give her one of the Cloves down her Throat, and for forty days after ſhe will not be troubled with the Filanders. Wherefore a Falconer will ſhew himſelf prudent, if ſeeing his Hawk low and poor, he give her once a month a Clove of this Garlick for prevention of the Filanders.

CHAP. VI.

Of Hawks Lice.

Theſe Lice do moſt infeſt the Head, the Ply of a Hawks Wings, and her Train. In the Winter you may kill them thus: Take two drachms of Pepper beaten to powder, and mingle it with warm water, and with this Lotion waſh the places infeſted with theſe Lice or Mites: Then ſet your Hawk on a Pearch with her Back and Train againſt the Sun; then hold in your hand a ſmall ſtick about a handfull long, with a piece of ſoft Wax at the end of it, and with that (whiſt the Hawk is weathering her ſelf) take away thoſe Vermin crawling upon the Feathers. You may do well to add to the Pepper and Water ſome Staveacre.

In the Summer-time you may kill the Lice with *Auripigmentum* beaten to powder, and ſtrowed on the places where they lie.

CHAP. VII.

How to keep and maintain all manner of Hawks in health, good plight, and liking.

In the firſt place, never give them a great Gorge, eſpecially of groſs meats, as Beef, Pork, and ſuch as are hard to be endewed and put over.

Secondly, never feed them with the fleſh of any Beaſt that hath lately gone to Rutt, for that will inſenſibly deſtroy them.

Thirdly, if you are conſtrained to give your Hawk groſs food, let it be well ſoaked firſt in clean water, and afterwards ſufficiently wrung; in Summer with cold water, in Winter with luke-warm water.

Ever obſerve to reward your Hawks with ſome good live meat, or elſe they will be brought too low: However by ſerving them with waſht meats is the way to keep them in health.

I ſhall conclude how to keep Hawks in perfect health with this moſt excellent Receipt. Take Germander, Pelamountain, Baſil, Grummel-ſeed, and Broom-flowers, of each half an ounce; Hyſlop, Saffiſras, Polypodium, and Horſe-mints, of each a quarter of an ounce, and the like of Nutmegs; Cubebs, Borage, Mummy, Mugwort, Sage, and the four kinds of Mirobolans, of each half an ounce; of Aloes Succotrine the fifth part of an ounce, and of Saffron one whole ounce. All theſe you muſt pulverize, and every eighth or twelfth day give your Hawks the quantity of a Bean thereof with their meat. If they will not take it ſo, put it into a Hens Gut tied at both ends, and let them ſtand empty an hour after.

CHAP. VIII.

Of the Formica.

This is a Diſtemper with commonly ſeiſeth on the horn of Hawks Beaks, which will eat the Beak away: And this is occaſioned by a Worm, as moſt men are of opinion.

You may perceive it by this, the Beak will grow rugged, and it will begin to ſeparate from the Head.

To remedy this Malady, you muſt take the Gall of a Bull, and break it into a diſh, and add thereto the powder of Aloes Succotrine: Mingle theſe well together, and anoint the Clap or Beak of your Hawk therewith, and the very place where the *Formica* grows, twice aday; but touch not her Eyes or Nares: continue thus doing till your Hawk be perfectly cured, and bath her with Orpiment and Pepper to keep her from other Vermin.

CHAP. IX.

Of the Frownce.

The Frownce proceedeth from moiſt and cold humours which deſcend from the Hawks Head to the Palate and root of the Tongue, by means whereof they loſe their appetite, and cannot cloſe their Clap. This by ſome is called the *Eagles-bane*; for the ſeldom dieth of age, but of the over-growing of her Beak.

You may know if your Hawk be troubled with this Diſtemper by opening her Beak, and ſeeing whether her Tongue be ſwollen or no: If it be, ſhe hath it.

There are ſeveral ways to cure this Diſtemper, but the beſt that ever yet I could find for it is, only to take the powder of Allum reduced to a Salve with ſtrong Wine-vinegar, and waſh the Hawks mouth therewith.

CHAP. X.

Of the Pip.

The Pip frequently troubleth Hawks, as it doth Chickens, and proceedeth from cold and moiſtneſs of the Head, or from feeding on groſs meat not well waſht in warm water in the Winter, and cold water in the Summer.

The Symptoms of this Diſtemper are the Hawks frequent *Sniting*, and making a noiſe twice or thrice in her *Sniting*.

For the Cure hereof, you muſt caſt your Hawk gently, and look upon the tip of her Tongue, and if you find the Pip there, you muſt ſcour her with a Pill made of Agarick and *Hierapierag* given two or three days together with her Caſting at night; this will cleanſe her Head, and the ſooner if ſhe be made to tire againſt the Sun in the morning: Then bind a little Cotton to the end of a Stick, and dipping it in good Roſe-water waſh her Tongue therewith: After this anoint it three or four days with Oyl of ſweet Almonds and Oyl-Olive well waſhed as before ſaid. Having ſo done, you will find the Pip all white and ſoft: Then take an Awl, and with the Point thereof lift up the Pip looſely, and remove it, as women pip their Chickens, but remove it not till it be thoroughly ripe; and wet her Tongue and Palate twice or thrice a day with the aforeſaid Oyl, till ſhe be thoroughly cured.

CHAP. XI.

How to remedy that Hawk which endeweth not, nor putteth over as ſhe ſhould do.

This happens either by being foul within, or by a Surfeit; or elſe when ſhe was low and poor her Keeper over-gorged her, by being too haſty to ſet her up, and the being weak was not able to put over and endew, and ſurſeited thereupon.

The Cure whereof is this: You muſt feed her with light meats, and a little at once, as with young Rats and Mice, Chickens or Mutton, dipt in Goats milk or otherwiſe; or give her a quarter of a Gorge of the Yolk of an Egg.

If you feed her with the fleſh of any living Fowl, firſt ſteep it well in the bloud of the ſame Fowl, ſo ſhall your Hawk mount her fleſh apace; if you alſo ſcour her

Kkk 2 with

with Pills made of Lard, Marrow of Beef, Sugar, and Saffron mixt together, and given her three mornings together, giving her also a reasonable Gorge two hours after.

CHAP. XII.

How to make a Hawk feed eagerly that hath lost her Appetite, without bringing her low.

A Hawk may lose her Appetite by taking too great Gorges in the Evening, which she cannot well endure; or by being foul in the Pannel; or sometimes by Colds.

To remedy which, take Aloes Succotrina, boil'd Sugar and Beef marrow, of each alike, only less of the Aloes, incorporate these, and make them into Balls or Pills as big as Beans, and give of them to your Hawk, and hold her in the Sun till she hath cast up the filth and slime within her, then feed her not till noon, at which time give her good meat; and three days after for the same Disease it is good tiring on Stock-doves, small Birds, Rats or Mice.

CHAP. XIII.

How to raise a Hawk that is low and poor.

The Poverty of a Hawk happens several ways: either by the ignorance of the Falconer of some later lurking Distemper; or by her soaring away, and so being lost four or five days, in which time finding little or no Prey, she becomes poor and lean.

To set her up you must feed her, a little at once, and often, with good meat and of light digestion, as small Birds, Rats, Mice, &c. Or thus: Take two spoonfuls of Honey, four of fresh Butter, and boil them together in a new earthen pot of water; then take Pork well washed, and steep it in that water, giving your Hawk a reasonable Gorge thereof twice a day, warming the said water when you intend to feed your Hawk: And get some Snails that breed in running waters, and give them her in the morning, and they will not only scour away the gross slimy humours which are within, but also nourish her exceedingly.

CHAP. XIV.

How to remedy a Hawk that is slothful, and is averse to flying.

A Hawk frequently hath no mind to fly, either by reason of her ill keeping, that is, when she is kept by those who know not how to give her her Rights, as *housing, bathing*, &c. or because the Hawk is too high and full of grease, or too poor and low: By the first she becomes proud and coy, and by the latter so weak that she wants strength and spirit to perform it.

For the curing of which Distemper, she ought to be thoroughly viewed by some skillful Falconer, by whom such Remedies should be administered to her as are needful for her: But above all there is nothing like giving her in a morning three or four Pills of Celandine well washed.

CHAP. XV.

Of Swollen Feet in a Hawk.

Hawks have *Swelling* in their Feet upon several accounts: Sometimes by chasing their Feet in flying their Prey, striking it, and taking cold thereupon; sometimes for want of rolling or lining the Pearch with some soft warm cloth; or else through gross Humours and Foulness within, which through exercise drop down into their Feet, and so cause them to swell; lastly, this Swelling happens by pricks when they fly fiercely into Bulhes after Game.

For a Remedy, you must scour your Hawk three mornings together with the Pills of Lard, Marrow, Sugar, and Saffron, and set her in the Sun; two days after this feed her with good meat; then take Bole-Armoniack, and half the quantity of *Sanguis Draconis*, and having made them into powder, temper them well together with the white of an Egg and Rose-water, and anoint her Feet twice a day three or four days together, setting her on some Cloth to keep her Feet warm.

CHAP. XVI.

How to scour Hawks before you cast them into the Mew.

When Mewing time is come, you must scour and cleanse your Hawks; for in luring and flying-time by foul feeding they engender Filanders and other Distempers, whereof they die for want of timely care and cure.

The best way is, (when you mean to cast a Hawk into the Mew) first to scour her well according to former directions, to cope her, and set her up well in flesh, to discharge her, as near as you can, of all Diseases, also to free her from Mites and Lice to set her water, sometimes to feed her with young Rats, Mice, Dogs-flesh, Pigeons, Rabbits, and now and then with some liquid thing and meats laxative.

Take notice of this special Observation: A Haggard is not to be cast in loose to the Mew, but is to be mewed on the Fist, for otherwise she will become too coy and strange: And if she fall to bating and beating her self for heat, then must you hood her up, or bespout her with cold water, which is the readiest way to make her leave Bating.

You must continue her on the Fist till she begin to shed her Feathers, then set her down and tie her to a Stone or Pearch, as you do the rest; and after she hath mewed and comes to fly, then let her stand on a Block or Billet cased or rolled. In the same manner mew Goshawks, Tiercels, and Sparrow-hawks; only they will not be born on the Fist, but be at liberty in the Mew, and very cleanly served.

Fifteen or twenty days before you draw your Hawk out of the Mew you must begin to abate her of her diet, the sooner and better to enscam her.

Many more Diseases there are incident and Accidents hapning to Hawks, of which with their Cures there are large discourses written in Italian, French, and English, and therefore I thought fit to insert in this place no other Maladies than what most usually occur: If you desire to be farther satisfied, I shall refer you to those larger Volumes.

*An account of some Sea-fowl out of the Description of the
Færoe Islands.*

IN the Description of the *Færoe* Islands, written by *Lucas Jacobson Debes*, I find an account of the manner of breeding and taking of some Water-fowl described by us, Book 3. Part 3. Sect. 1. Chap. 2, 4, 5. and Sect. 3. Chap. 2. which because it confirms and illustrates what we have there delivered, I shall here sub-join. The names by which these Birds are known in the *Færoe* Islands are the *Skræbe*, the *Lunde*, the *Lomwifue*, and the *Sea-Daw*. The *Skræbe*, that is our *Mank Puffin*, comes in *February* about *St. Matthias* day, and fareth away about *St. Bartholomew* [Aug. 24.] The *Lomwifue*, that is our *Guillemot*; and *Sea-daw*, that is our *Razor-bill*, come about *St. Gregory's* tide, [March 12.] and fly away at *Mary Magdalens* [July 22.]

The *Skræbe*
or *Puffin*.

The aforesaid sorts of Birds lay every one but one Egg, and get but one Young every year; and though they be those that are chiefly fought for, and there be taken of them 100000 every year, there is nevertheless more of them than of any other sort; yea, by the admirable providence of God, they are so plentiful, that in clear weather they can darken the shining of the Sun, as it were with a thick cloud, making such a terrible noise with their Wings in flying, that they who hear it, and do not know the cause thereof, would not think otherwise than that it were Thunder.

The *Skræbe* [Puffin] builds on the Land under the earth; scraping with its Beak and Claws, lying on the back, (whence it is called a *Skræbe*) it diggeth a hole in some places a foot deep, in some other eight or ten foot in several turnings, seeking especially to dig it self behind a stone, where it thinketh to lie securest. It is very remarkably, that this Bird is the whole day away from its Young and never comes to it but in the night to feed it; and if it flies not from its Young at the dawning of the day but it stays with it the whole day over, and then flyeth out to Sea till the other night cometh: And though the Young be fed but once a day, yet it is so fat, that no Goose, though it hath been three weeks fed, can be fatter. These young ones they call *Lyers*, and by reason of their fatness they do not make present use of them, but save them to eat them in Winter, melting their fat, which they burn in Lamps. They have to take them out several hooks half an Ell, or an Ell long, wherewith they pierce them through and draw them out. They do not usually take the Dam herself, except she be sometimes hurt with the hook that she cannot live. If they cannot get the young one with their hook, or by thrusting their arm into the birds Nest, by reason of the many turnings, they dig a hole down to it, as near as they can guess, and then thrust about with their hooks till they can get it: Which hole they must again stop so close, that not one drop of water can come into it, for else she will forsake her hole, and never come thither more; which otherwise she doth every year in the wonted place; so that the Inhabitants know where under the earth to find that Birds Nest yearly.

The *Lunde*
or *Coulterneb*.

The *Lunde*, so called also by *Hoier* in his Epistle to *Clusius*, and by *Clusius Anas Arctica*, by us *Conterneb* and *Muller*, hath a strong crooked Beak, so that if it biteth a man by the hand it teareth off the flesh. It wageth war with the *Raven*, that cometh to take it away and its young ones: It being a wonderful spectacle to see cometh to take it away and its young ones: It being a wonderful spectacle to see their fight; for as soon as the *Raven* cometh near, the *Lunde* catcheth it under the Throat with its Beak, and graspeth it about the Breast with its Claws, so that the *Raven* cannot hurt it, but must fly away with a great crying. The *Lunde* holds it fast in the mean time without letting it go, till they come into the Sea, where (slipping it is drown'd). Yet the *Raven* doth often take the *Lunde* at unawares, rusheth into its hole, takes and eats it up. I suspect there is something of fabulous in this Narration. The said Bird, the *Lunde*, buildeth its Nest sometimes on the Continent, far from houses, digging it self two or three yards, according to the nature of the place, under ground; sometimes in *Ures* (that are places under high Cliffs, full of great and small stones, that fall from the Cliffs, and by length of time are filled between with earth, and covered with grafs) in which places they dig themselves into the earth, or earth, where there is no earth, their Nest under and between stones, where they can build, where there is no earth, their Nest under and between stones, where they can come to breed their Young with most security. The most part being taken in such places, so that a man may often take above a hundred *Lundes* in one *Ure*. Some of them

them build on the side of Promontories, where they find great tufts of earth in flat places, and when they fly from their Nests, they first make them clean, scraping all the dirt and old roots out of the holes, and putting fresh grafs in them again. The *Lunde* that make their Nests in the fields are taken as is said above of the *Skræbe*: But for such as are under those many stones, they let run unto them some little Dogs, that are so taught, as to bring out both Bird and Egg to their Masters: But when the Birds are flown, the men take them flying; which is done in this manner. They have a long pole, at the end of which there is a Hoop drawn over with a Net, whereof the Malles are almost as big as the quarries of a glass-window, being like the Net wherewith they take *Shrimps* in some places, and this they call a *Stang* or *Staff*, with this Staff the Fowler sitteth on the Cliff, or in the *Ures* among the great stones, where he knoweth most Fowl to come, which they call flight-places, and when the *Lunde* cometh flying either from or to the Land, he lifts up the Staff and the Net against the Fowl, and when he hath got it into the Net, he turneth the Staff about, that it may entangle it self the better therein: A man being sometimes able to take two hundred *Lundes* in that manner in a very short time.

The *Lomwifue*, that is *Hoiers Lomwia*, and our *Guillem* or *Skout*, layeth her Eggs on the bare Points and Cliffs of high Rocks and Promontories, there lying on these Cliffs some hundred Eggs, according as the place is large, but three fingers breadth from one another, and when the Birds fly away the Eggs rowl often down into the Sea. But laying but one Egg she sitteth straight thereon, and continueth so a months time, never stirring from the place till her young one be hatch'd; in the mean time the Cock bringeth her to eat. They lay in this manner, sitting close one to another, Bird by Bird all over the place, so that the Cliff seemeth quite black, and the young one being hatch'd, she remains yet three weeks with it, and then taketh it on her back and carrieth it to Sea. When the Fowler cometh to that place, if there have not often been men there before, it hapneth sometimes that the old will not leave their young ones, and therefore are taken with the hand as many as they are and killed; but where they are grown wild by reason of mens continual hunting after them, they fly away, the young ones running together in a flock, and when the Hen cometh again, she seeks the same place where she sat before, and clacketh so long till her young one cometh to her, being very well able to discern its own Dam, though they be all shaped alike, and when she giveth her Young to eat she putteth her head back under her Wing, giving it so to eat backwards.

The *Lum-*
wife or
Guillem.

The *Daw*, that is *Hoiers Alka* and our *Auk*, (whence I guess the Author was mistaken in the name) hatcheth its young ones in holes and chinks of high Promontories. That *Hoier* was not mistaken in the name of this Bird I conclude, because it is called by the very same name, viz. *Auk*, in the North of England; so that it is manifest either our Northern men borrowed it of the *Færoese*, or the *Færoese* of them, it being very unlikely that by chance they should impose the same name upon it. But that ours borrowed this name of the *Færoese* seems to me more probable because in other parts of England, farther distant from the *Færoer* Islands this Bird is called by other names. And yet possibly it may be also called a *Daw* in those Islands, as either it or the *Guillem* is in *Cornwall*. Why they should call it a *Daw*, I cannot imagine unless from its bigness, and the colour of its back.

The *Daw* or
Razor-bill.

It cannot be exprest with what pains and danger they take these Birds in those high and steep Cliffs, whereof many are above two hundred fathoms high, there being men apt by nature, and fit for that work, called *Fowlers*, who take them usually in twomanners: For either they climb from below up into these high Promontories, that are as steep as a wall, or they let themselves down into them from above, with a thick, strong, hemp-rope, when they climb from below, they have then a pole five or six Ells long, with an iron hook at the end, which they that are below in the Boat, or on the Cliff, fasten unto the mans Girdle, or another Rope that the Fowler hath about him, helping him thus up to the highest place, where he can get footing: afterwards they also help up another man, & when they are so several come up, every one with his Fowling Staff in his hand, and the long Rope between them tied to each others waste, they climb so as high as possibly they can; and where they find difficulty they help each other up by thrusting one another under the breech with their Poles: And when the first hath taken footing, he draweth the other up to him by the Rope fastened to his waste, and so they proceed on till they come to the place where the Birds build; going then after them about the hill as they please, and there being many dangerous places to climb about, having bound themselves at the Ropes end, the one seeketh a convenient

convenient place where he can stand sure, and hold himself fast, whilst the other goeth about these dangerous places; if it then happen that he chanceth to fall, the other that stands firm keeps him up, and helps him up again: But if he passeth safe, he likewise fastneth himself till the other hath passed that dangerous place; and so they go about the Cliffs after Birds as they please; though it often happeneth, the more is the pity, that when the one doth not stand fast, or is not strong enough to hold up the other in his fall, that they both fall down and kill themselves; in which manner some do perish every year.

Mr. Peter Clauson in his description of Norway writeth, that there was anciently a Law in the Country that whosoever climbed so on the Cliffs, that he fell down and died, if the body was found to be buried, his next Kinsman should go the same way; but if he durst or could not do it, the dead was not then to be buried in Sanctified earth, as one that had been too full of temerity, and was his own bane. But there is found nothing of that Law nowadays.

When they then are come, in the manner aforesaid, to the birds, within the Cliffs where they seldom come, the Birds are so tame that they can take them with their hands, for they will hardly leave their young ones; but where they are wild, they either cast the Net over them on the Clift; and against those that either fly from thence or thereunto, they oppose the Fowling Staff with its Net, and intangle them therein. In which manner they take a great multitude of *Lumwises*, *Daws*, and *Lundes*. In the mean time there lieth a Boat beneath on the Sea, wherein they cast their Birds killed; and in this manner they can in a short time fill a Boat with Fowl. When it is pretty fair weather and there is good Fowling, the Fowlers stay in the Cliffs seven or eight days together, for there are here and there holes in the Rocks, whereto they can safely rest, and they have neat let down to them with a line from the top of the Mountain. In the mean time some go every day to them to fetch home what they have taken.

Some Rocks are so difficult, that they can in no manner get unto them from below, wherefore they seek to come down thereunto from above, which they call to Sie, and is the second manner to pursue birds, being performed in this manner: They have a Rope eighty or a hundred Fathoms long, and three Fingers thick, the Fowler maketh the end thereof fast about his Waste, and between his Legs, so that he can sit thereon, and thus is let down, with the Fowling Staff in his hand; six men hold by the Rope and let him easily down, laying a piece of wood on the brink of the Rock, upon which the Rope glideth, that it may not be worn to pieces by the hard and rough edge of the stone: They have besides another small line that is fastened to the Fowlers body, on which he pulleth, to give them notice how they should let down the great Rope, either lower or higher, or to hold still, that he may stay in the place whereunto he is come; here the man is in great danger, because of the Stones that are loosened from the Clift by swinging of the Rope, which often fall upon his head, and he cannot avoid it, wherefore he hath usually on his head a Sea mans Cap, that is thick and very thaggy, to defend him in some measure from the blows of the Stones, if they be not too big, otherwise it costeth him his life. They put nevertheless themselves continually in that danger, for our wretched bodies foods sake, hoping in Gods mercy and protection, unto which the most part of them do also devoutly recommend themselves, when they go to that work. Otherwise they say there is no other great danger in it, but that in it self it is a toilsome and artificial labour; for he that hath not learned to be so let down, and is not used thereunto, is turned about with the Rope, so that he groweth giddy and troubled in his head, and can do nothing, but he that hath learned the art taketh it for a sport, knowing how to swing himself on the Rope, to set his feet against the Rock, calling himself some fathoms from thence, whence he shooteth himself again to what place he will, and knoweth where the Birds are; he knoweth also to sit on the line in the Air, and how to hold the fowling Staff in his hand, taking therewith the birds that come, or fly away, and when there are holes in the Rock, and it stretcheth it self out, making underneath as a sieving, under which the birds are, he knoweth skillfully (which is the greatest art) to shoot himself a great way from the Clift, and twisly to swing himself under the roof, and there take footing, making himself, when he is in these holes, loose of the great Rope, which he fastens to a stone of the Rock, that it may not slip from him to the outside of the Clift; and then he goeth about in the Rock, taking the Fowl either with his hands, or with the Fowling Staff; according to the manner aforesaid; and when he hath killed as many Birds as he thinketh fit, he ties them in a bundle, and fastneth them to the little Rope, giving a

sign by pulling, that they should draw them up, working thus the whole day: And when he will get up, he sitteth again upon the great Rope, giving a new sign that they should pull him up, or else he worketh himself up climbing along the Rope with his Girdle full of Birds. It is also usual that where there is not folks enough to hold the great Rope, the Fowler driveth a post sloping into the earth, and maketh the Rope fast thereunto, letting so himself down without any bodies help, to work in the manner aforesaid; some Rocks are so formed that one can go in them from the Land, and there he taketh his Comrades with him, proceeding in the manner aforesaid, each taking as much Fowl, as the Girdle about his Waste can hold, and as much as he can carry in a bundle on his back, carrying them in that manner home. There are also in some places high steep Cliffs, under the Land, that arise above an hundred Fathoms from the Sea, that are almost as bad to come unto as the Rocks, whereunto they help also one another in the aforesaid manner, taking a strong Rope with them, which they taken here and there about the Clift, and let it hang there the whole Summer, by which they nimbly climb up to take Fowl when they please.

These manners are more terrible and dangerous to see, then to describe, specially if one considers the steepness and height of the Rocks, it seeming not possible that a man could come to them, much less climb or be let down into them. They go also in some places where they can only fasten the ends of their Toes and Fingers, not slumming such places, though there be a hundred Fathoms height between them and the Sea.

It is a dear Meat for these poor people, for which they must venture their Lives so extremely, and many after long venturing at last do perish therein.

When that Fowl is brought home, a part thereof is eaten fresh, another part, when there is much taken, being hung up to dry for Winter provision. The Feathers being gathered to make Merchandize of for other expences.

The Inhabitants get a great many of those Fowls as God giveth his blessing, and fit weather. Yet this is not every where in the Land, but only in the Islands that lie towards the Sea, and have great Promontories, as the Northern Islands, *Myggenes*, *Wangoe*, *Skue*, the *Diemens*, and *Suderoe*.

And when it is dark Weather, they take most, for then the Birds stay in the Rocks, but in clear Weather and hot Sun-shine they seek the Sea, and against their flying away, they keep themselves most there, sitting on the Cliffs towards the Sea side, where people go also sometimes to them with Boats, and take them with Fowling Staves.

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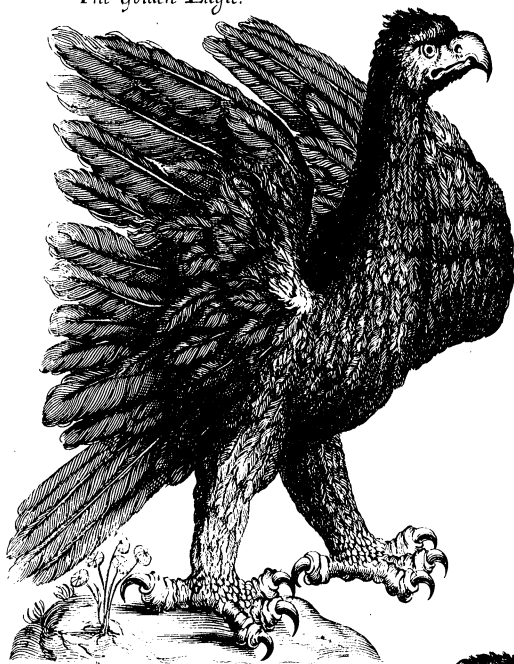
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F I N I S.

Chrysaëtos Gesneri.
The Golden Eagle.

TAB. I.



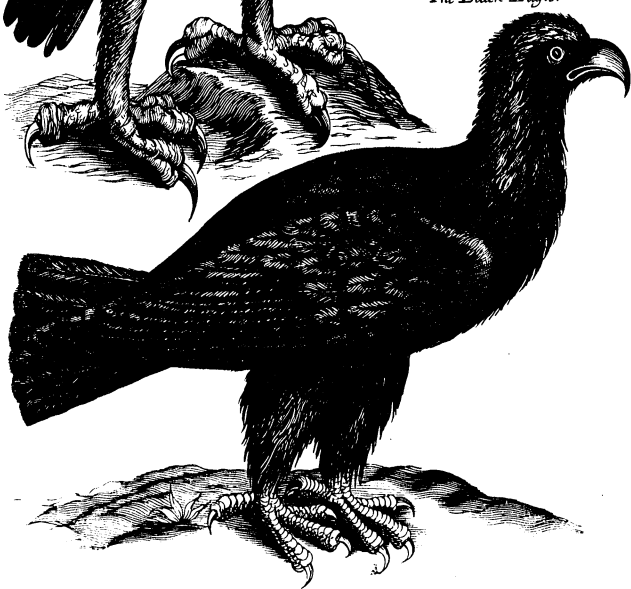
Haliaetus Clusij Osifraga Aldrov.
The Sea Eagle or Osprey.



Morphno congener Aldrov.



Melanactus seu Aquila Valeria Aldrov.
The Black Eagle.



Accipiter Polumbarius
a Goshawk.



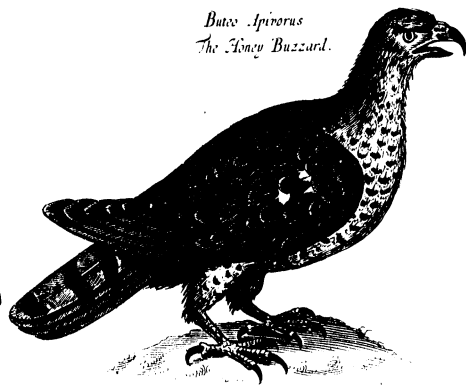
Trabu. Marggrou.



Æsala
a Merlin.



Buteo Spizorius
The Honey Buzzard.

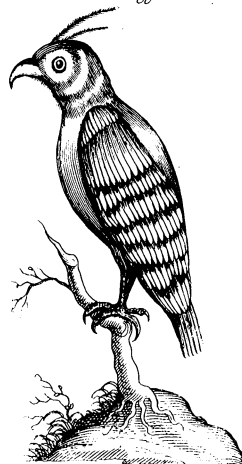


Vultur.
The Vulture.

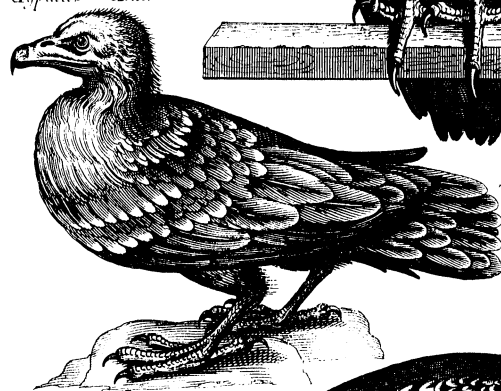


Vultur aureus.
The golden Vulture.

Vulturina Maygr.



Cypaetus Aldr.





Tinnunculus
The Kestrel



Accipiter fringillarius
The Sparrow Hawk



Accipiter Palumbarius
The Goshawk

Balbus ardens Anglorum.
Anataria seu Morphnos Gesri.
The Bald Buzzard.



Buteo The Buzzard.



Milvus cauda forcipata
The Kite or Glead.



Milvus arizonensis Alder.
The moss Buzzard



Pugargus
The lion hunter



Sabbuco Alder.
The scoby.



Falco peregrinus.
The Peregrine or
Hazard Falcon.



Gyr-falco.
The Gyr Falcon.



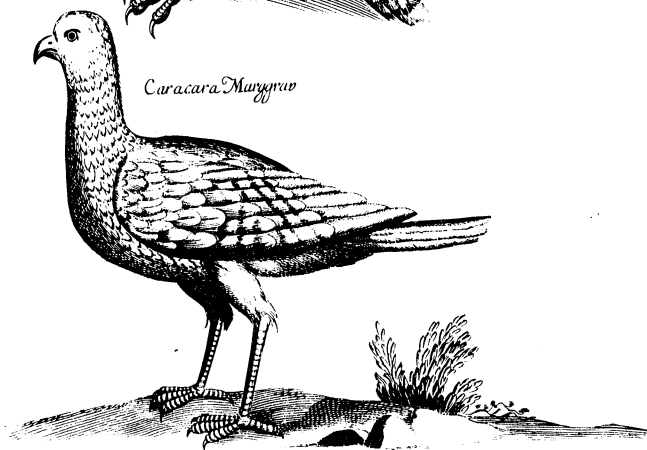
Falco montanus secundus
Aldrov.
The mountain Falcon.
f. 2.



Falco ruber Indicus.
prior Aldrov.
The Red Indian
Falcon.



Caracara Marryruo



Lanius cinereus major
The greater Butcher bird.



Collurio seu Lanius minor
The lesser Butcher bird



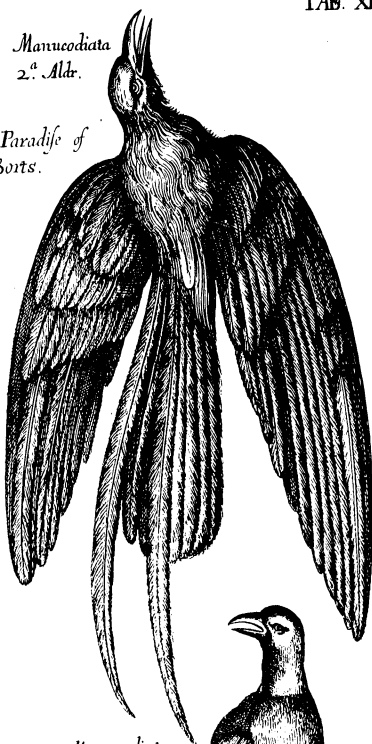
Cuculus
The Cuckoo



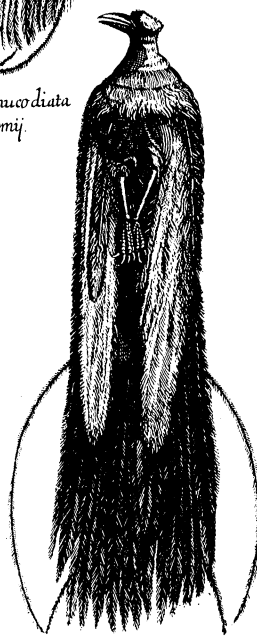
Manucodiata
1. Aldrov.
The Bird of
Paradise.



*Birds of Paradise of
Severall Sorts.*



Manucodiata
Wormij.

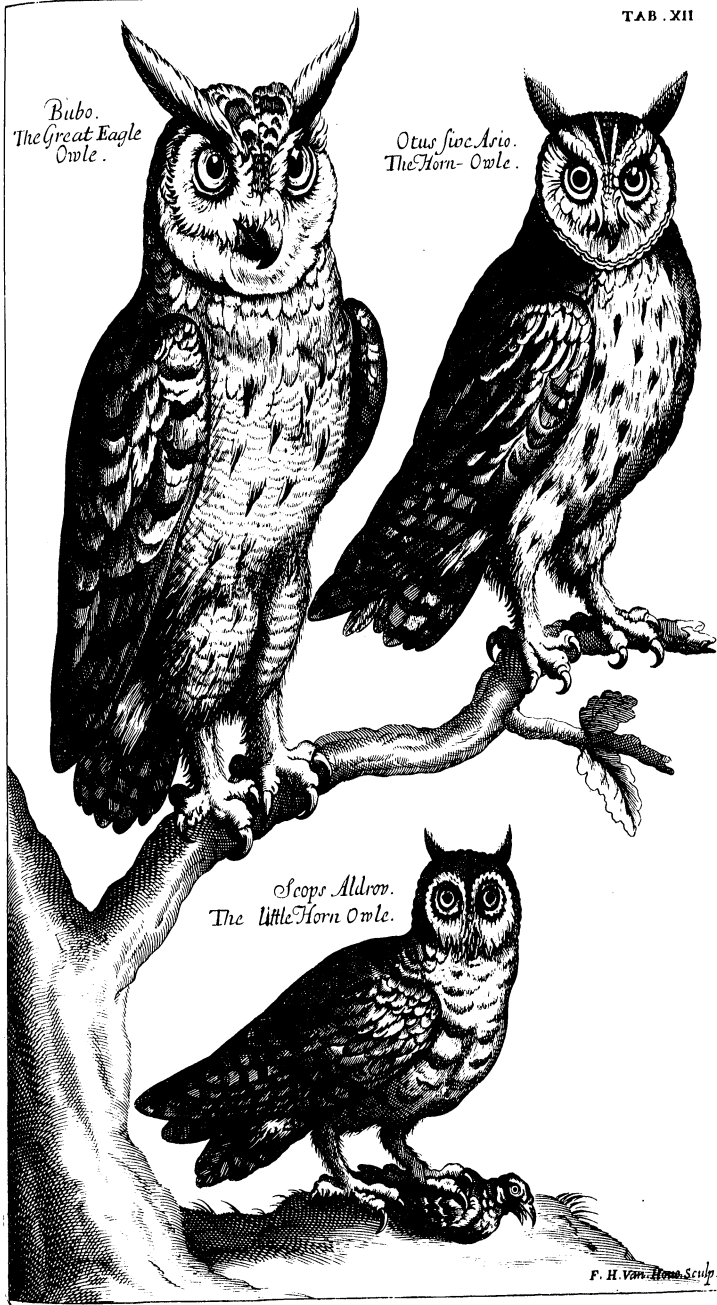


Manucodiata
altera Nicemb.



Bubo.
The Great Eagle
Owle.

Otus fusc. Ario.
The Horn- Owle.

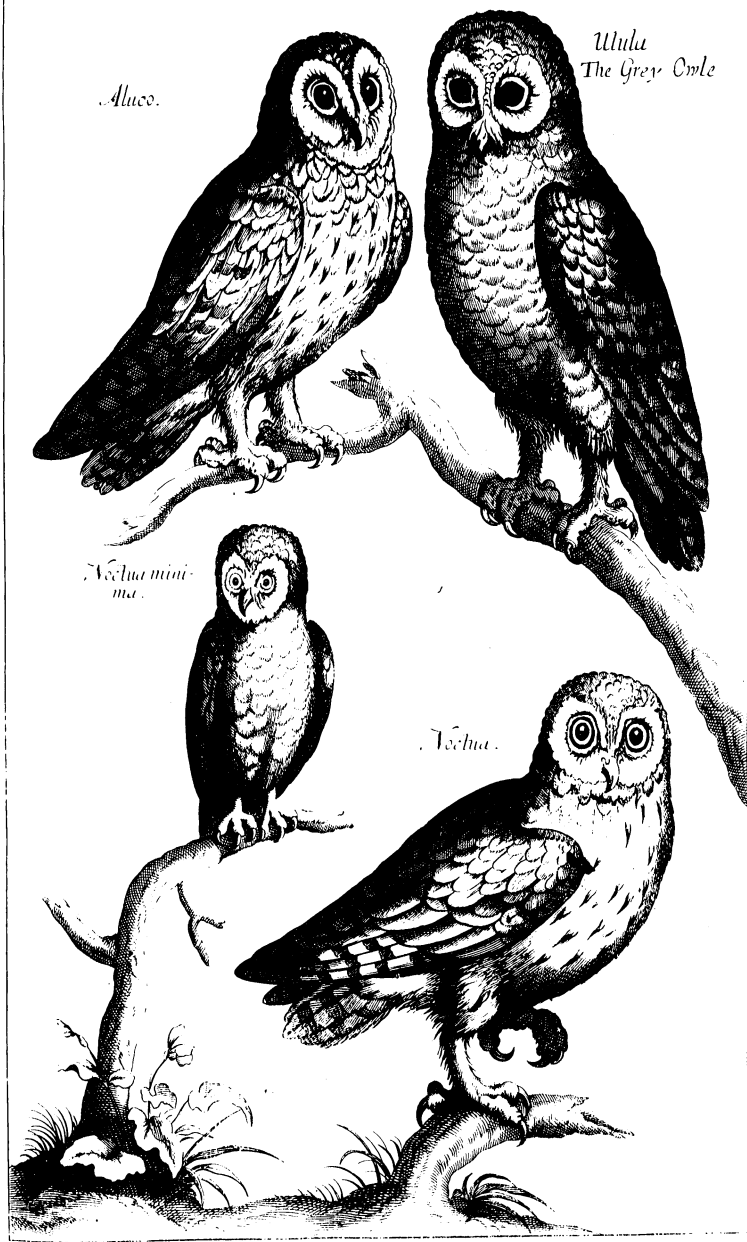


Aluco.

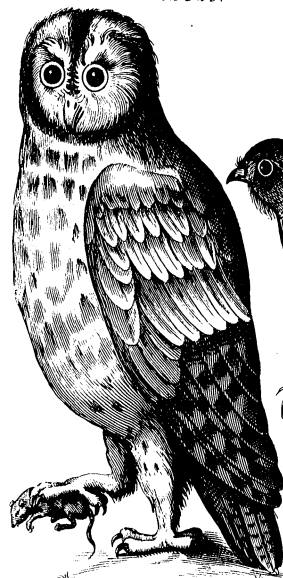
Uulu
The Grey Owl

*Nechu mini-
ma.*

Tochua.



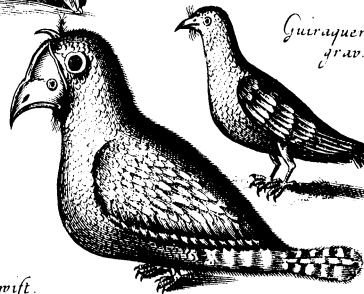
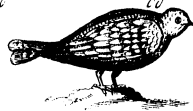
Strix Aldrov.
the Brown or Screech Owl.



Caprimulgus
The Gout sucker
or Churn Owl.

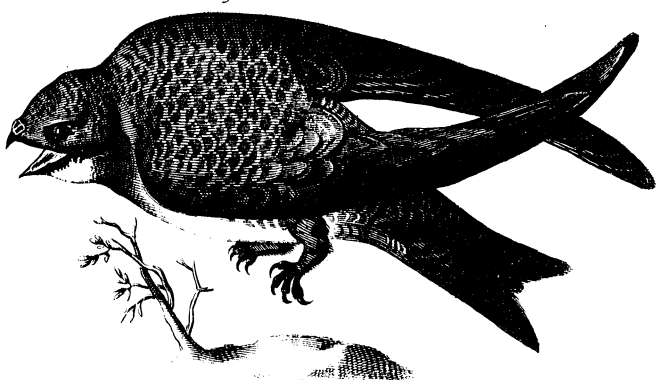


Nyctale five Nyctibo ma-
jor & minor *Marygr.*



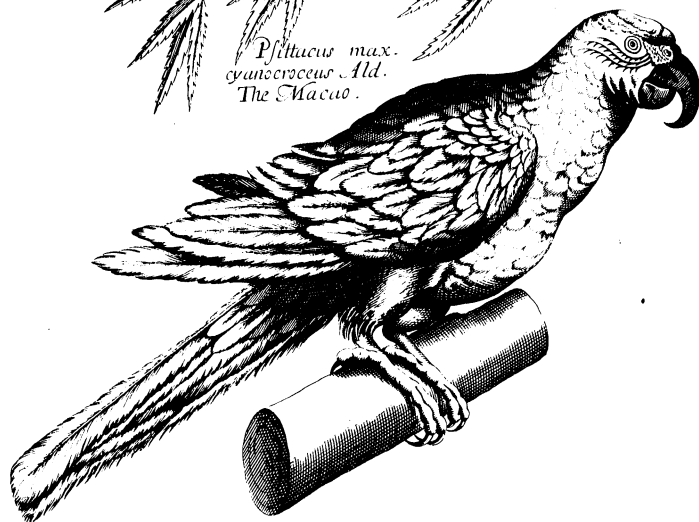
Guiraguera Mary-
gr.

Cirundo apus
The black Martin or Swift.





Psittacus albus cristatus.
The white crested Parrot.

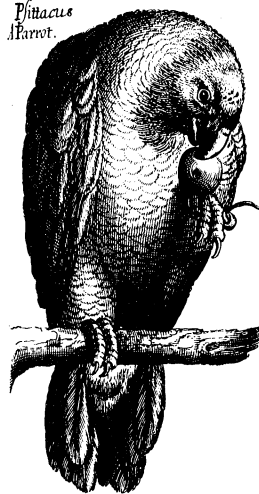


Psittacus max.
cyanocephalus Ald.
The Macao.

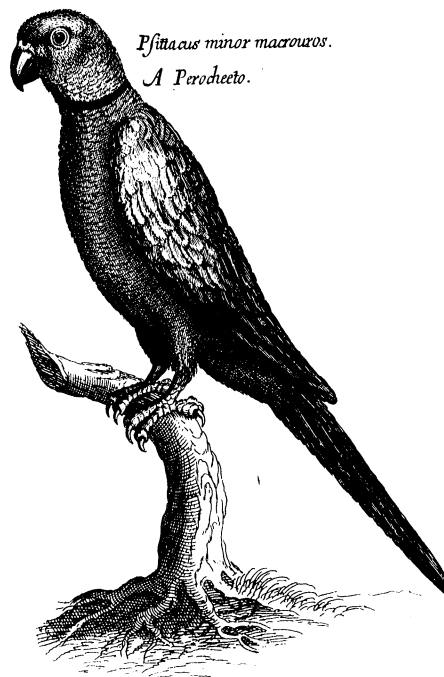
Pittacus media magnitudinis.
A common Parrot.



Pittacus
A Parrot.

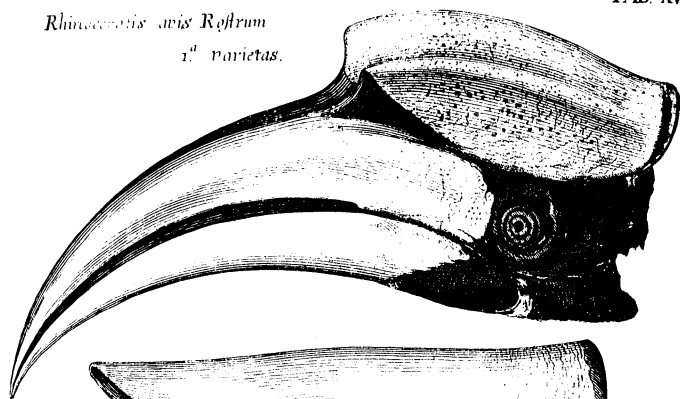


Pittacus minor macrourus.
A Perocheeto.

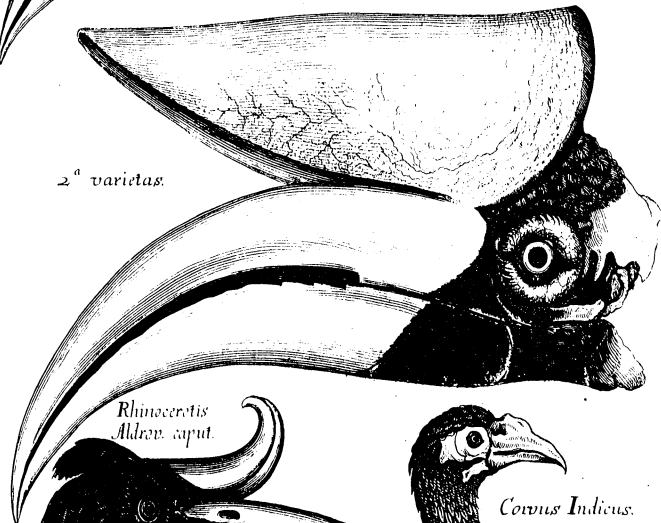


Rhinoceros avis Rostum

1.^a varietas.



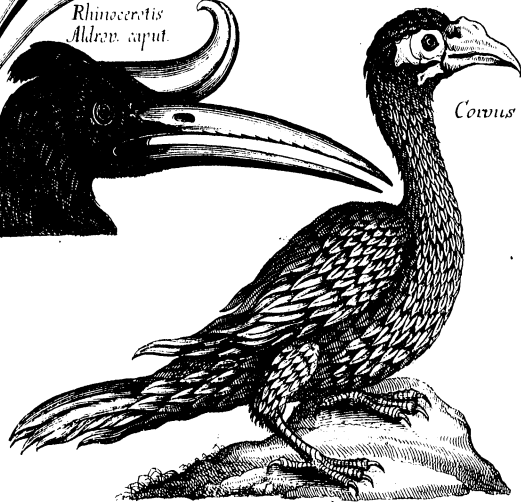
2.^a varietas.



*Rhinoceros
Aldrov. caput.*



Corvus Indicus.



Corvus The Raven.



Corvus nigra The Crow.



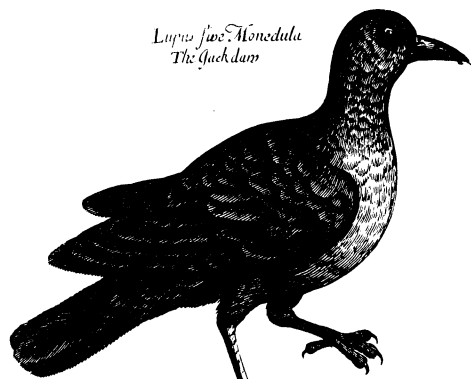
Corvus pygila.
The Rook.



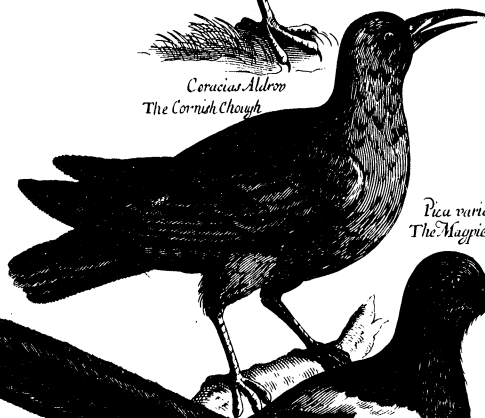
Corvus cinerea.
The Rouson Crow.



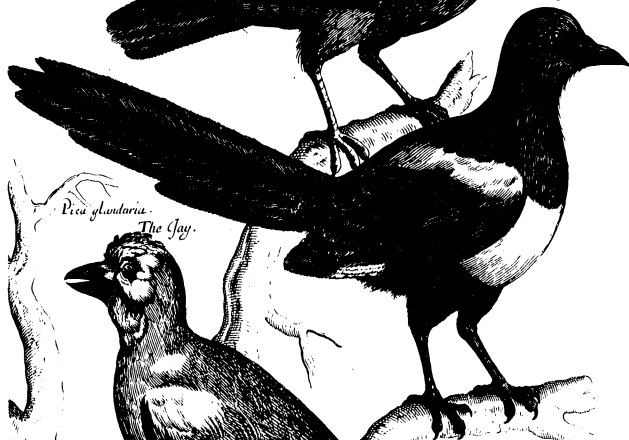
Lupus sine Maculula
The Jackdaw



Coracias Aldrov
The Cornish Chough



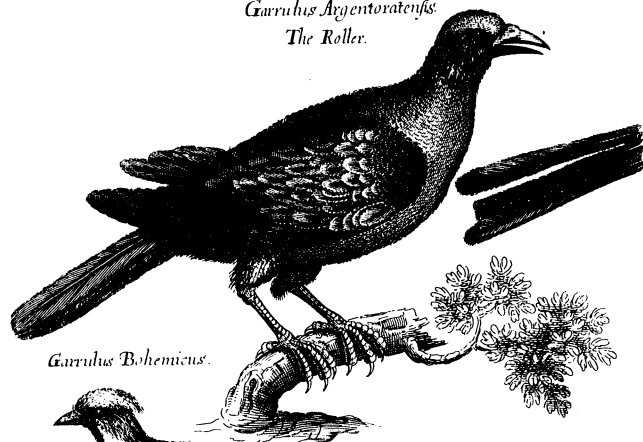
Pica varia seu caudata
The Magpie or Planet



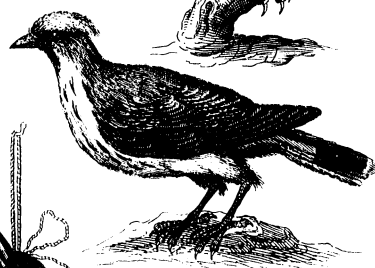
Pica glandaria
The Jay



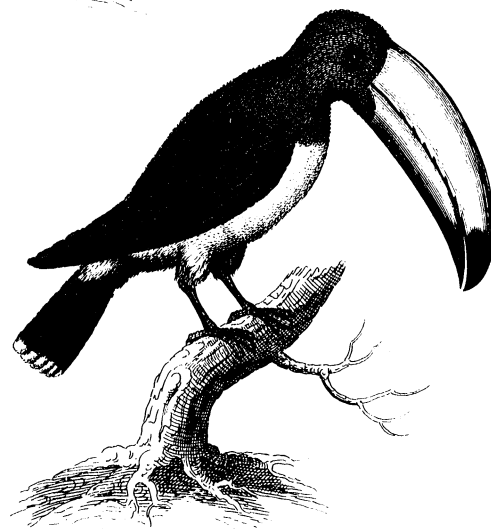
Garrulus Argentoratensis
The Roller.



Garrulus Bohemicus.



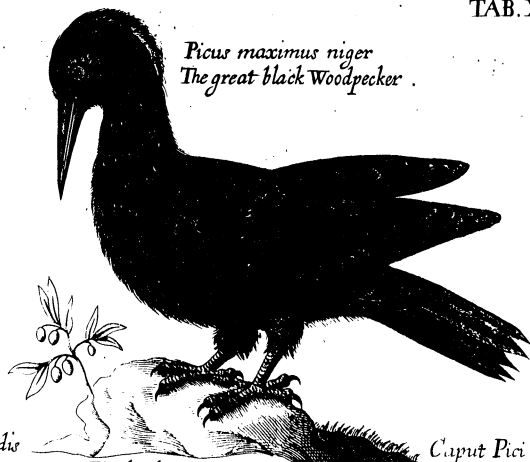
Pica Brasiliensis Tucan.



Ceryle alcyon.



Picus maximus niger
The great black Woodpecker.



Picus viridis
The common green Woodpecker
or Woodpeckite.



Caput Pici dissectum.



Picus varius minor
The lesser spotted
Woodpecker.



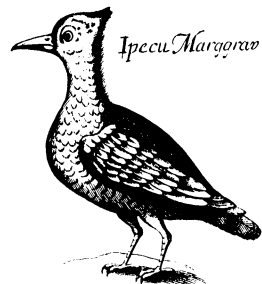
Picus varius major
The greater spotted
Woodpecker.



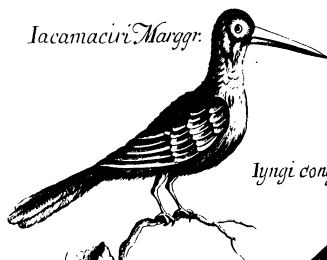
Iynx sive Torquilla.
The wyneck.



Ipecu Marggrav.



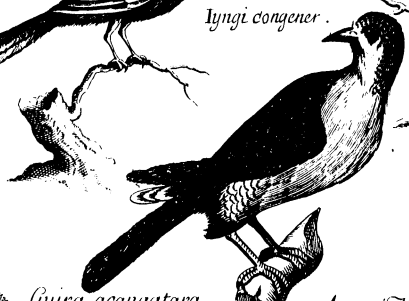
Iacamaciri Marggr.



Curuci Marggrav.



Iynxi congener.



Guira acangatara.
Marggrav.



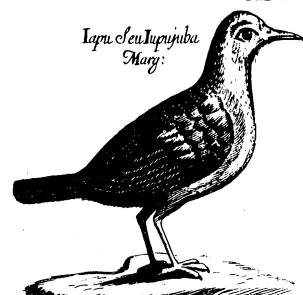
Aracari Marggr.



Guiraca caerulea
Mary:grae.



Lepus leucogaster
Mary:



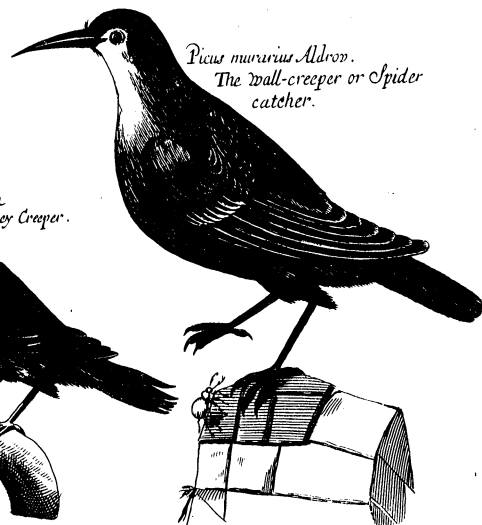
Sitta leucophaea
The Xudhatch.



Ficedula cornabina.

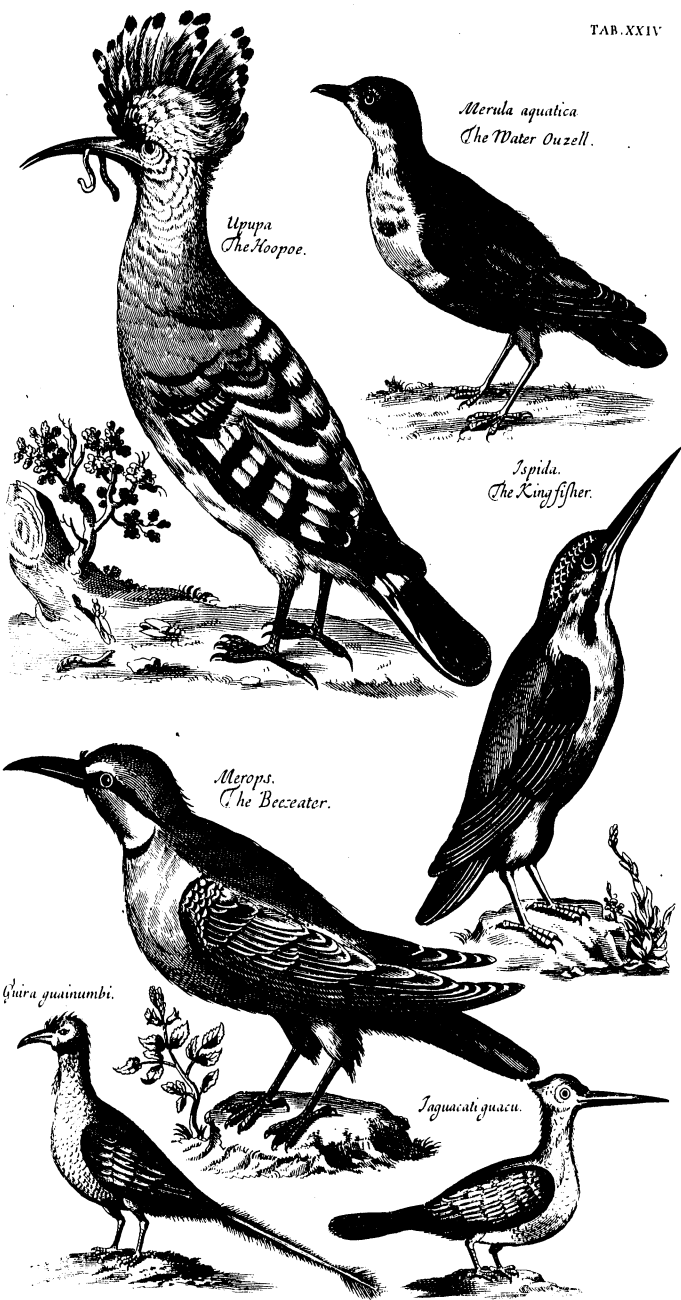


Picus murinus Aldron.
The wall-creeper or Spider
catcher.



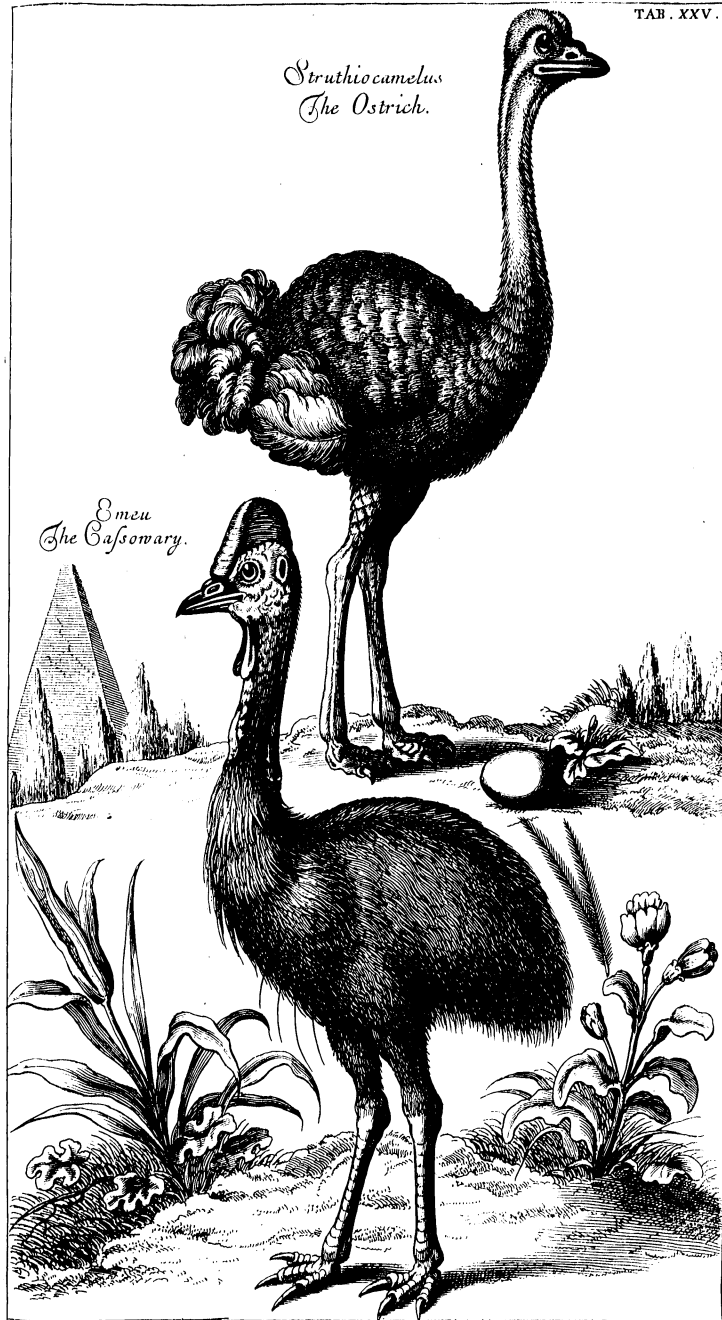
Certhia
The Ox-ey Creeper.

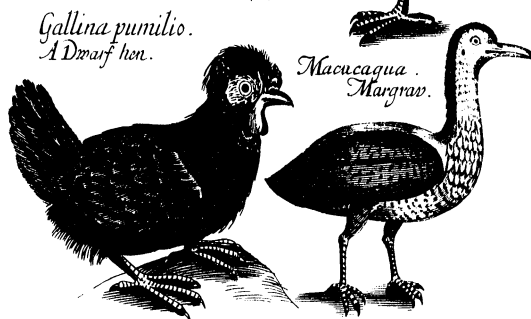
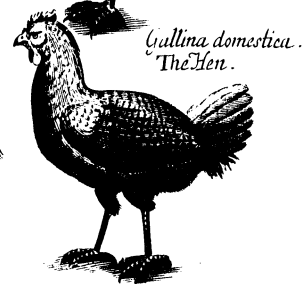
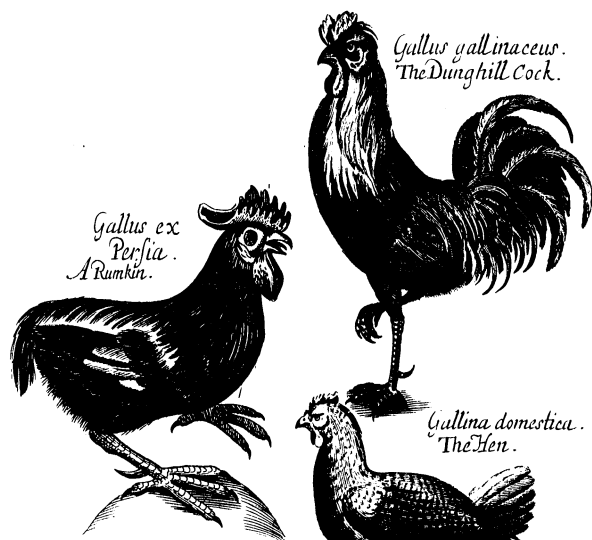


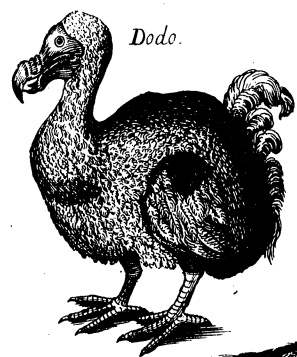


Struthio camelus
The Ostrich.

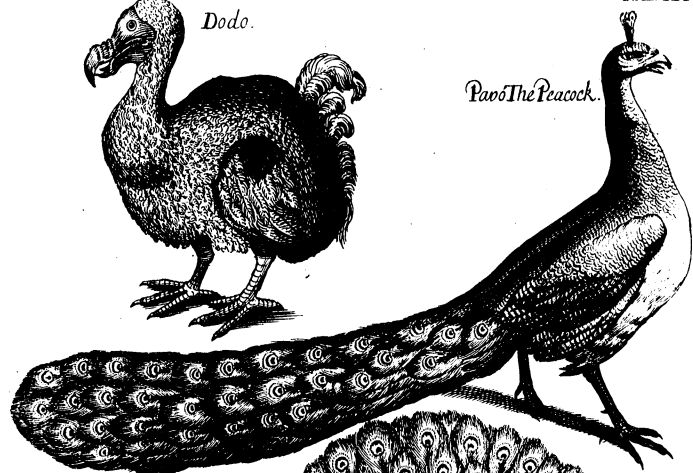
Emeu
The Cassowary.



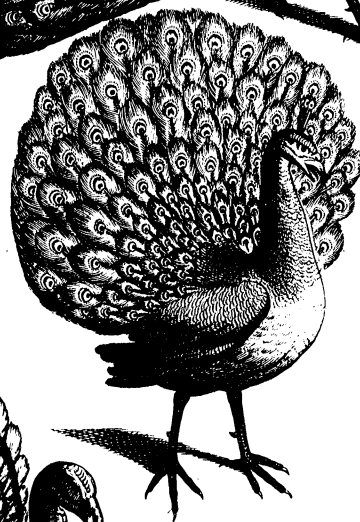




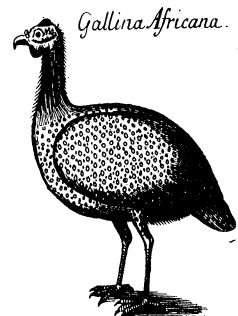
Dodo.



Pavo The Peacock.

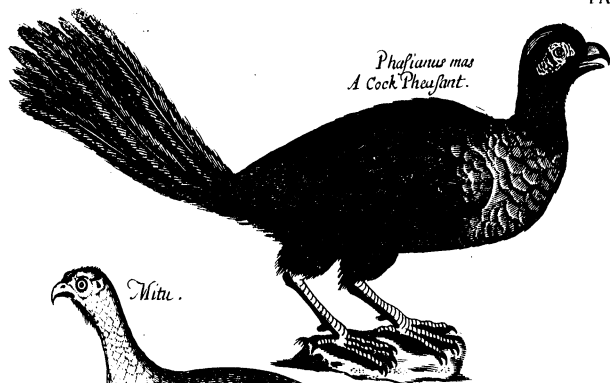


Gallo pavo. The Turkey.

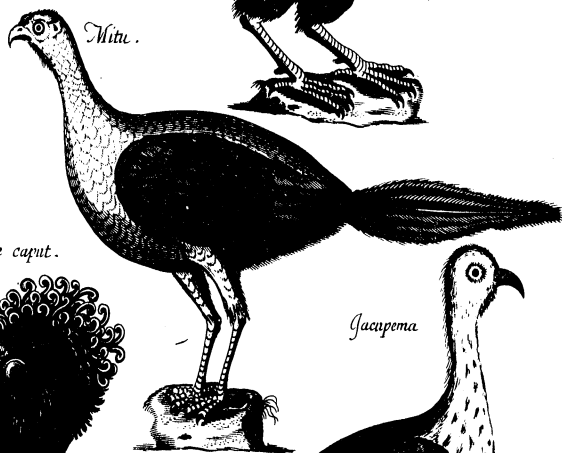


Gallina Africana.

Phasianus mas
A Cock Pheasant.



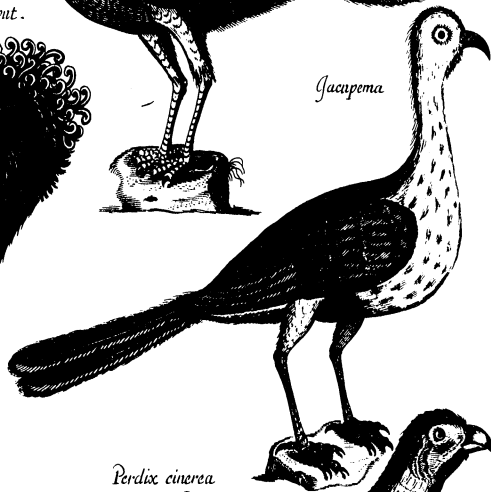
Mitu.



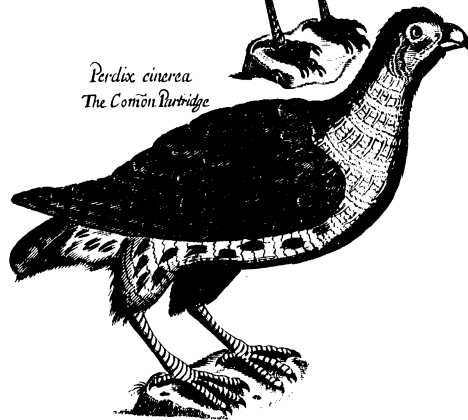
Mituporanga caput.



Jaupema



Perdix cinerea
The Common Partridge



Perdix Damascena.
The Damascus Partridge.



Perdix rufa.
The red leg'd Partridge.



Ortygometra.
The Rail or Daker hen.



Coturnix.
The Quail.



Coturnix famina.
A Hen Quail.



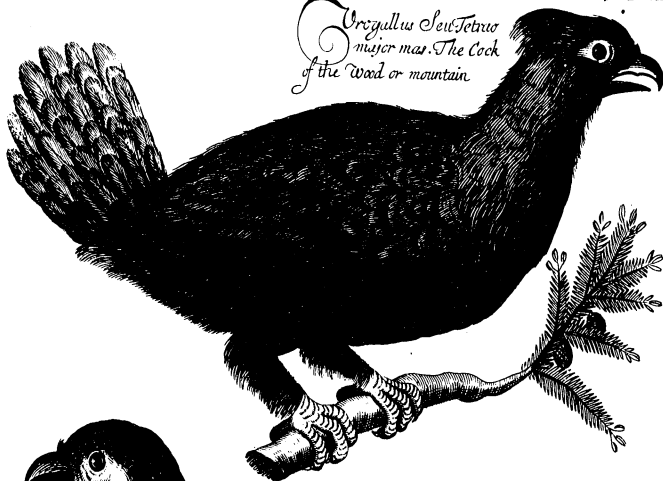
Coturnix Indica
Bontj.



Perdix rubra.



Orygallus leucotetrus
major mas. The Cock
of the Wood or mountain



Orygallus famina
The Hen of y^e wood or
mountain.

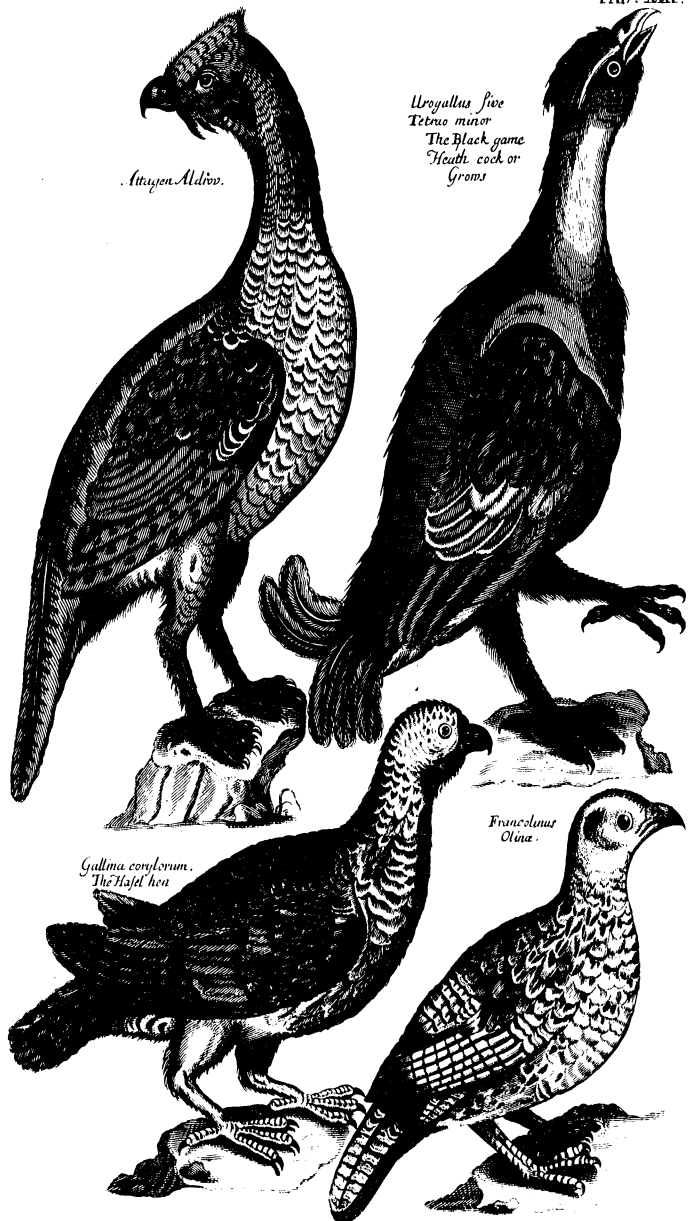


Attagen Aldrov.

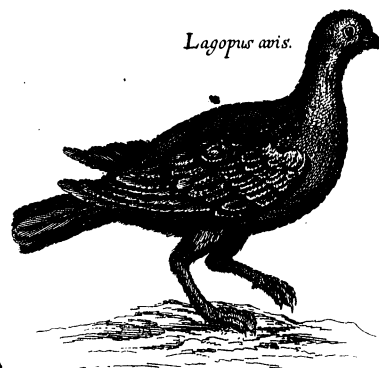
Urogallus five
Tetrus minor
The Black game
Heath cock or
Groms

Gallina conylorum.
The Hazel hen

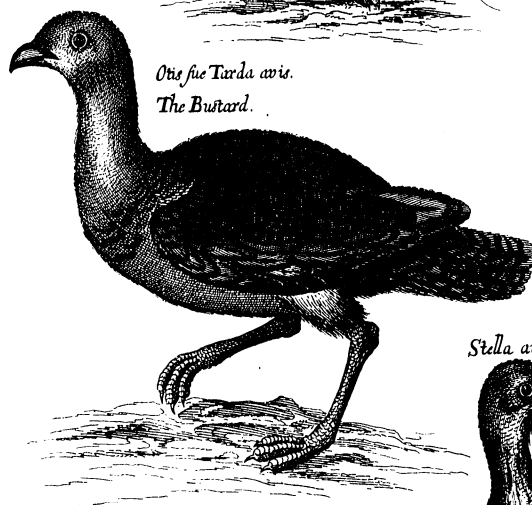
Francolinus
Olinz.



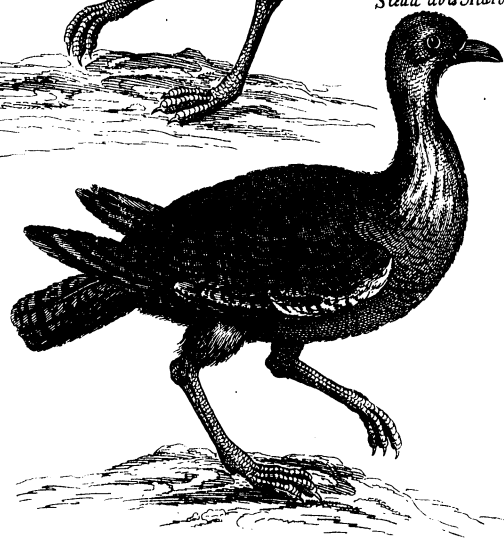
Lagopus avis.



Otis sic Tarda avis.
The Bustard.



Stella avis Aldrov.





Columba domestica major.
The great house Dove or Pigeon.



Columba hirsutiopedibus.
A rough footed Dove.



Columba cyprica acullata.
A Jacobine Pigeon.



Columba turcica seu pacifica.
A Persian or Turkey Pigeon.

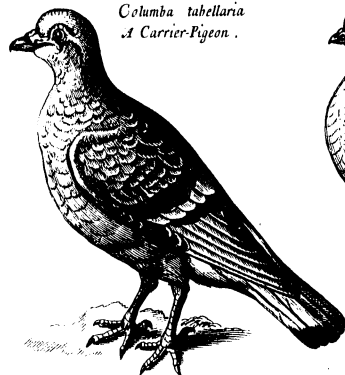
Columba gutturosa
A Cropper dove.



Columba hirsutus pedibus
A rough-footed Dove.



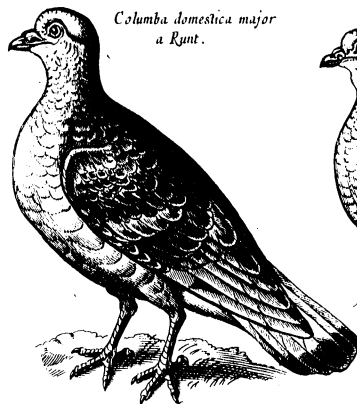
Columba tabellaria
A Carrier-Pigeon.



Columba Numidica seu Cyprina
a Barbary Pigeon.



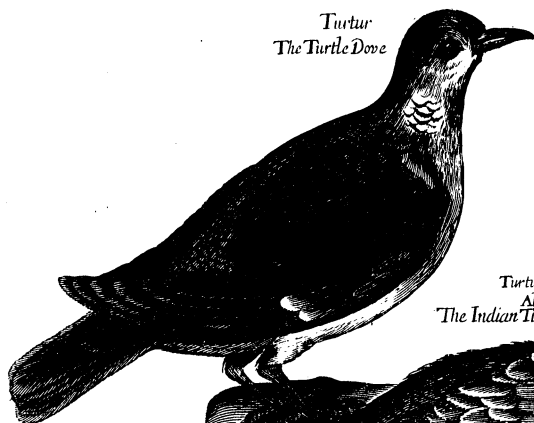
Columba domestica major
a Runt.



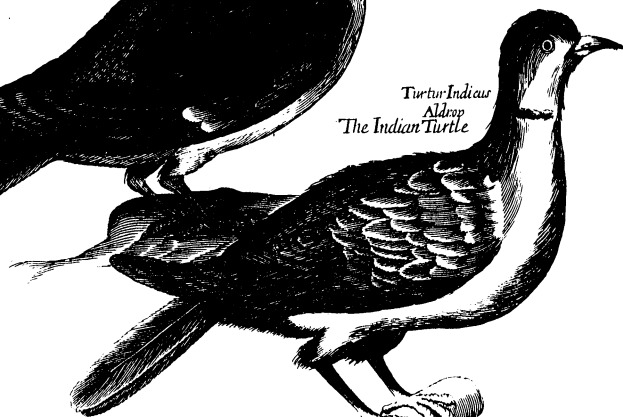
Columba tremula laticauda
A broad-tail'd Shaker.



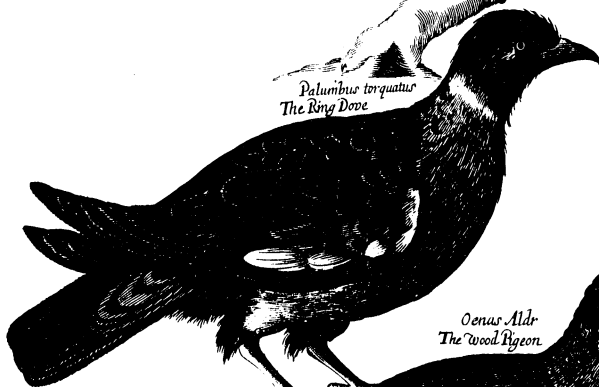
Turtur
The Turtle Dove



Turtur Indicus
Aldrov
The Indian Turtle



Palumbus triquatus
The Ring Dove



Oenas Aldr
The Wood Pigeon



Turtur minimus
Barbadosis.

The least Barbados Turtle



Turdus viscivorus
The Mistle-bird.



Merula
The Black-bird.



Passer
solitarius.
The Solitary Sparrow



Merula
Saxatilis.
The greater Redstart

Galbula juvenis.





Turdus philicæter.
The Mavis or
Song Thrush.



Turdus pilaris.
The Fieldfare.



Merula.
The Blackbird.



Paster solitarius
mas Aldrov.



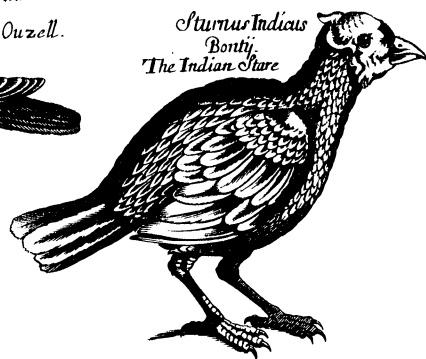
Merula torquata.
The Ring Ouzell.



Sturnus.
The Starling.



Merula Saxatilis
Aldrov.
The Rock Ouzell.

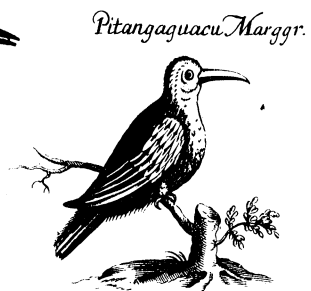
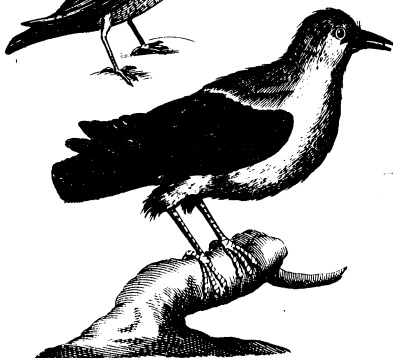


Sturnus Indicus
Bontj.
The Indian Sware



Guirapunga.

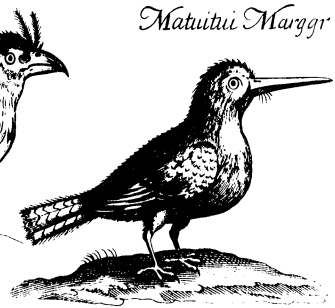
Oriolus Seu
Galbula.



Pitangaguacu Marggr.



Atinga guacu mucu Mary-
grav.



Matutui Marggr.



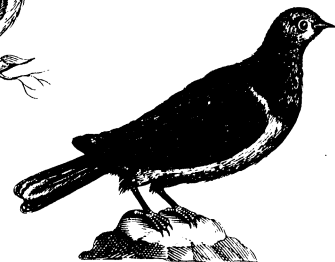
Hirundo apus.
The black Martin
or Swift.



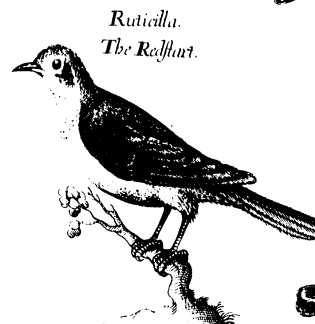
Hirundo domestica.
The common house Swallow.



Hirundo agrestis seu erythra.
The Martin or
Martlet.



Hirundo riparia.
The Bank Martin.



Ruticilla.
The Redstart.

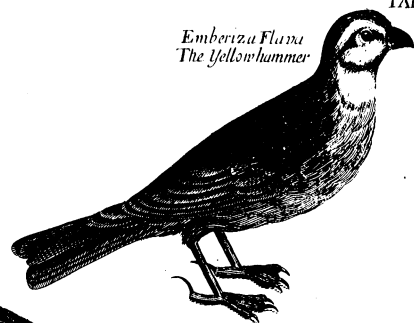


Rubecula.
The Robin-red
Breast.

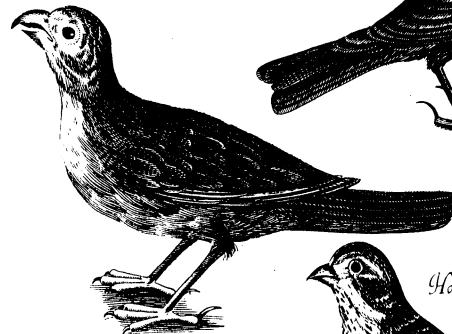


Hirundo domestica

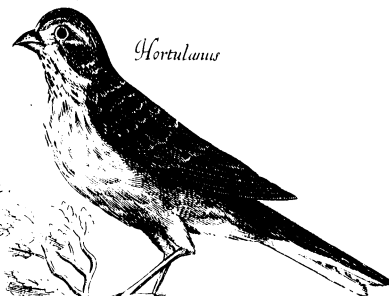
Emberiza Flava
The Yellowhammer



Emberiza alba
The Bunting



Hortulanus



Alauda vulgaris
The Common Lark



Alauda cristata major
The crested Lark



Tett. v. oliv.
The wood Lark



Luscinia
The Nightingale.



Atricapilla
The Blackcap.



Tyrannus carolinensis
Mangr.



Oenanthe isabellina
The White-tail.



Oenanthe isabellina
The Stone-chatter.



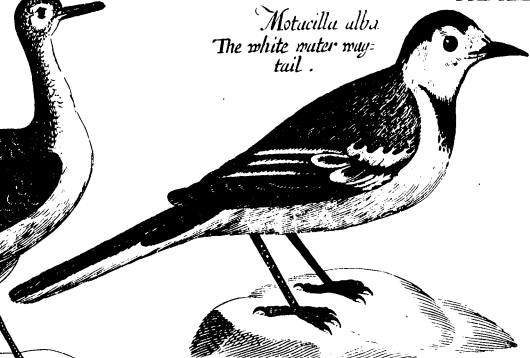
Guiraguacuberaba.



Roth hemlein.
Baltner.



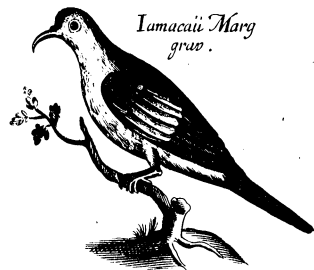
Motacilla alba
The white water may-
tail.



Regulus cristatus.
The capped wren.



Lamacaia Mary
gris.



Puffin troglodytes.
The wren.



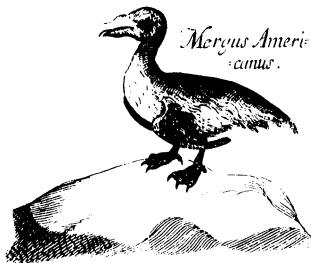
Regulus non cristatus.



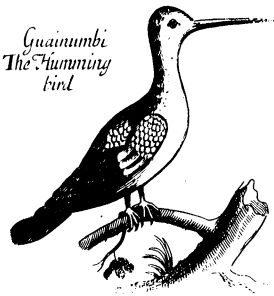
Curisfia sive Tomincio.



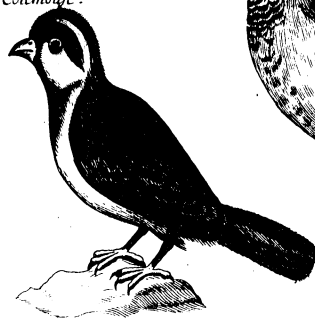
Mergus Ameri-
canus.



Guainumbi
The Humming
bird.



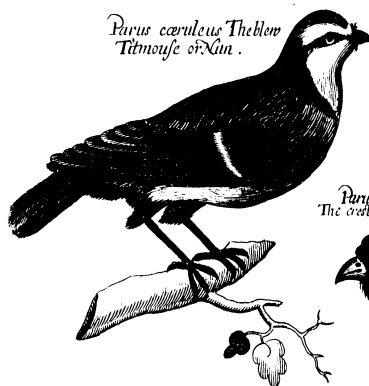
Parus ater
The Colemoufe.



Parus major seu Fringillago
The Great Titmouse or
Ox. or



Parus caeruleus Theblow
Titmouse of Can.



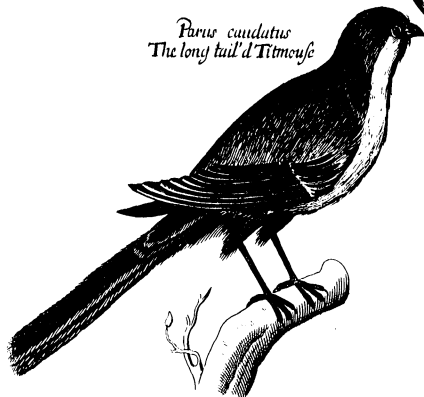
Parus palustris
The Marsh Titmouse.



Parus cristatus
The crested Titmouse



Parus caudatus
The long tail'd Titmouse





Coccothraustes.
The Grosbeak or Hawfinch.



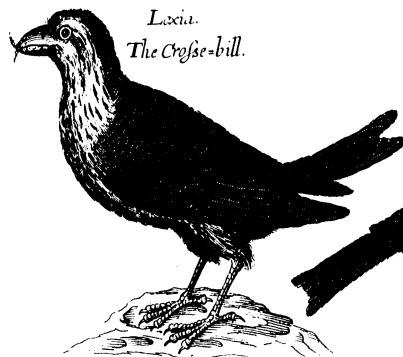
Coccythraustes Indica cristata.
The Virginian Nightingale.



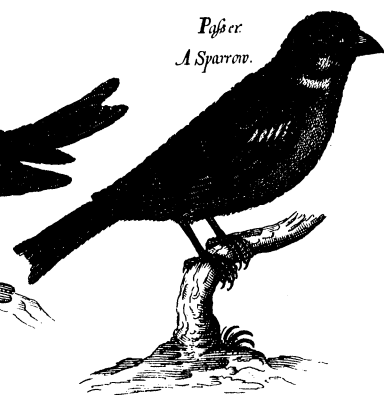
Chloris.
The Greenfinch.



Rubicilla.
The Bullfinch.



Loxia.
The Crossbill.



Pyser.
A Sparrow.



Passer Stultus
Olin
The Foolish
Sparrow



Passer montanus
The mountain sparrow



Passer Indicus
macrourus Aldr.
The Long-tailed Indian
Sparrow.



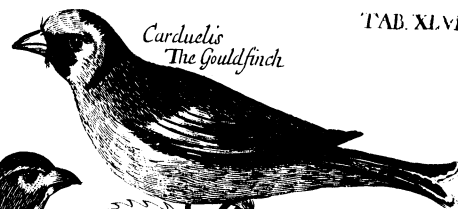
Fringilla
The Chaffinch.



Montifringilla
The Brambling



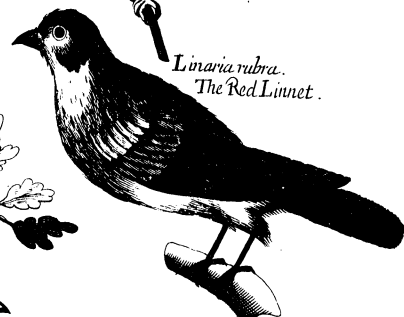
Tijeguacu parava.



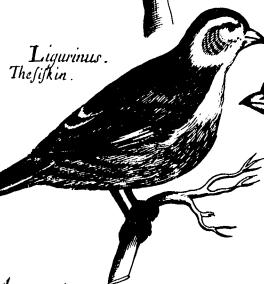
Carduelis
The Gould finch



Linaria
The Linnet



Linaria rubra.
The Red Linnet.



Ligurinus.
The Thistlefinch.



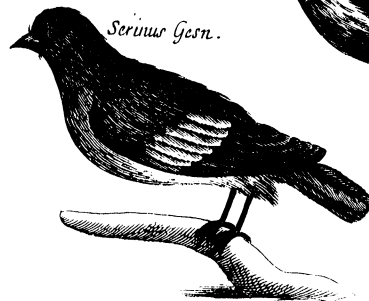
Psalter Canariensis
The Canary Bird.



Ayicula Anadavensis.
The Anadavat Bird.

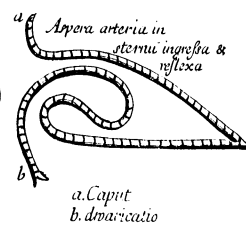
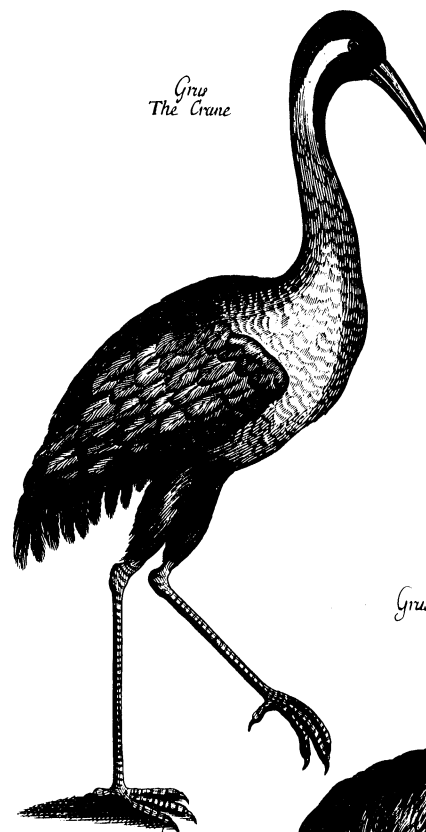


Citrinella.



Serinus Goss.

Grus
The Crane



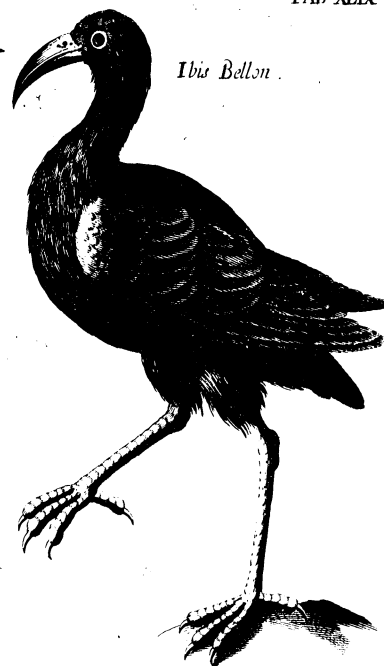
Grus Balcatica



Ardea cinerea
major
The Common
Heron.



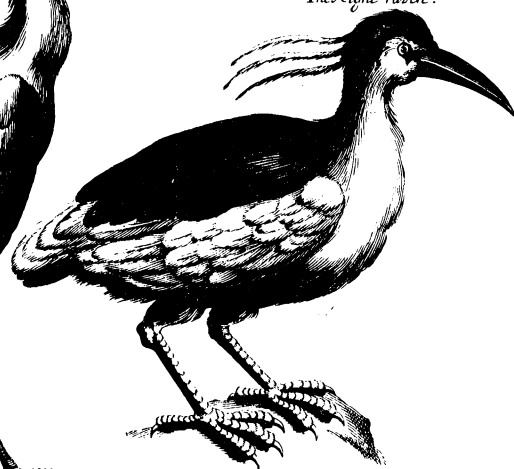
Ibis Bellon



Ardea alba
major.
The Great
White Heron.



Ardea cinerea minor
The Night-raven.



Ardea hematopus.
Aldr.



Ardea Stellaris.
The Bittern.



Ardea congener



Squialotta Aldr.





Soco
Marggravij.



Cocoi
Marggravij.



Cariama Brasili-
ensis Marg.



Ardeola Brasili-
ensis Marg.



Fulica Major
The greater Coot.

Ciconia alba
The Stork.



Ciconia nigra
The Black Stork.

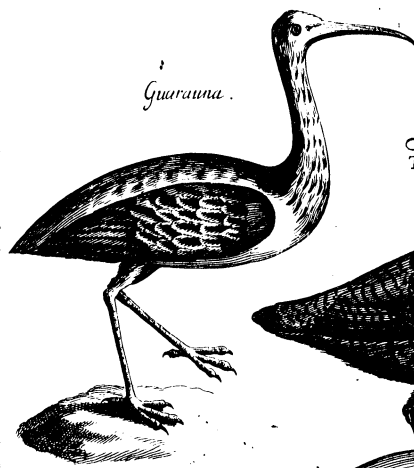


Plataea seu Al-
bardicola.
The Spoon bill.

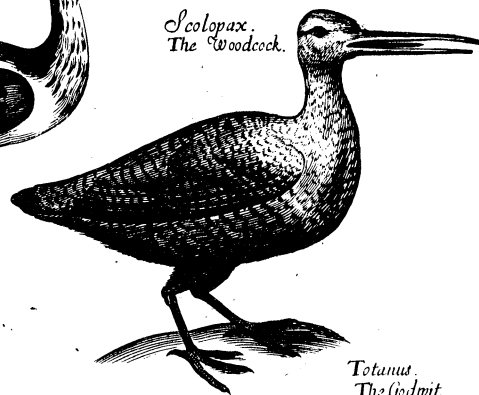


Ardeola stellaris.
The Bittern.





Guarauna.



Scolopax.
The Woodcock.



Gallinago minor
The Snipe.



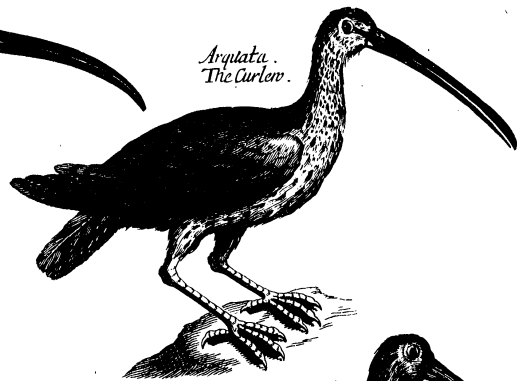
Fedoa altera
The Yarnhelp



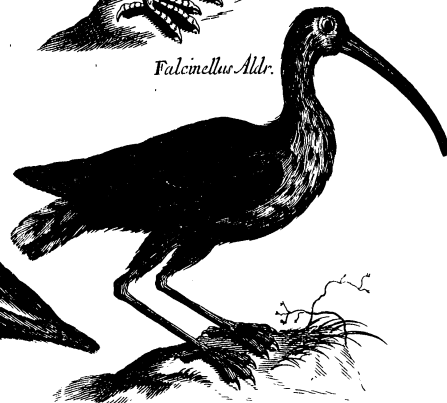
Totanus.
The Godwit



Arquata
The Curlew.



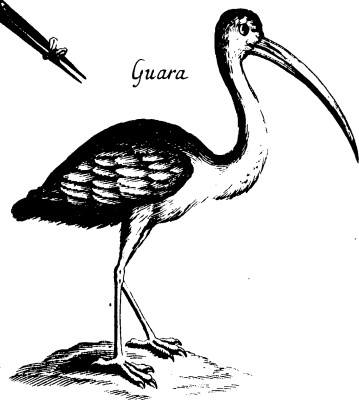
Curicaca.



Falcmellus Aldr.

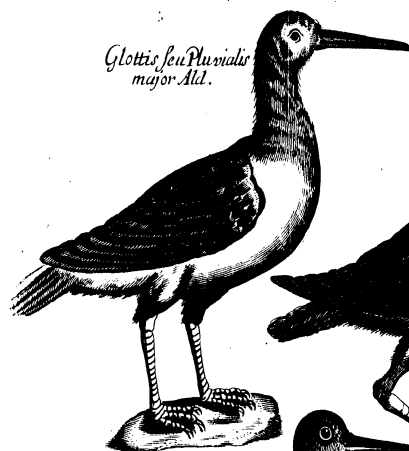


Himantopus

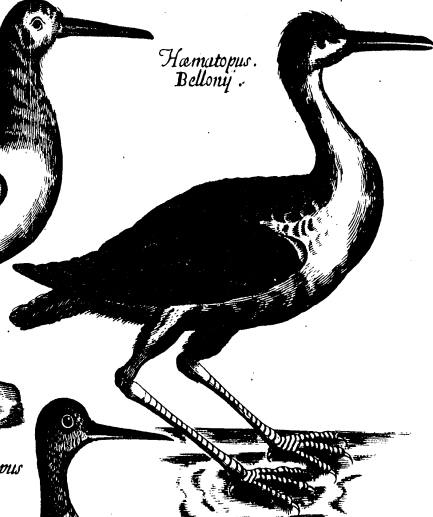


Guara

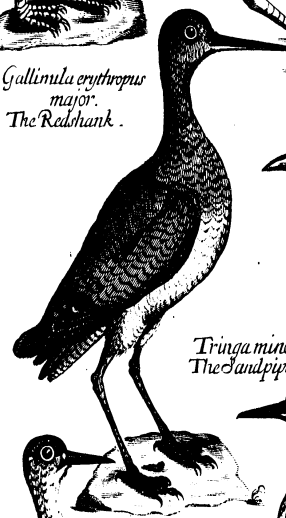
Glottis seu Pluvialis
major Ald.



Hamatopus.
Bellony.



Gallinula erythropus
major.
The Redshank.



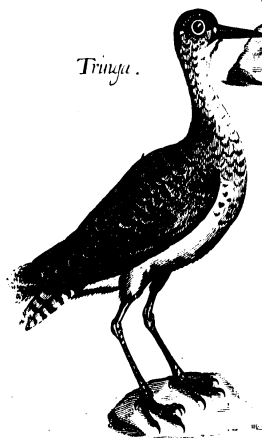
Morindlus.
The Dottrell.



Tringa minor.
The Sandpiper.



Tringa.

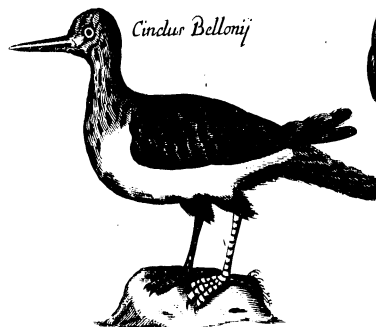




*Callidrys
nigra.*
The Knot.



Rotknysel.
an *Aris pugnax*
fem.



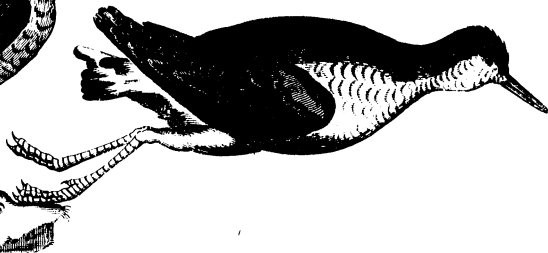
Cinclus Bellonij



Aris pugnax mas
A Ruffe

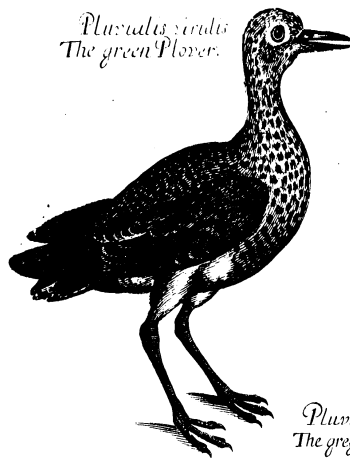


Matkneltzell.

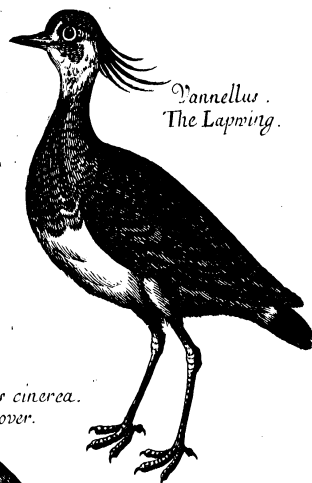


Aris pugnax femina.
The Rave.

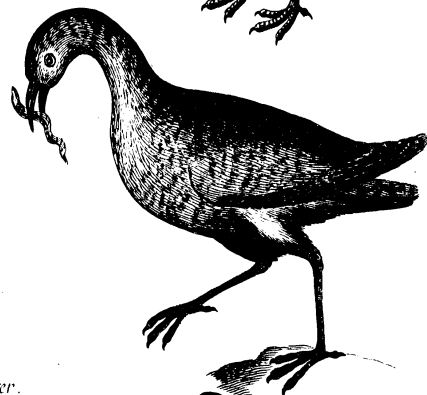
Pluvialis viridis
The green Plover.



Vannellus
The Lapwing.



Pluvialis cinerea
The grey Plover.



Merinellus
The Dottrell



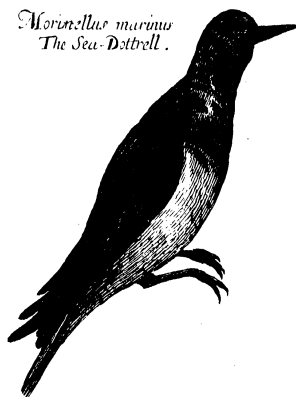
Charadrius alter.



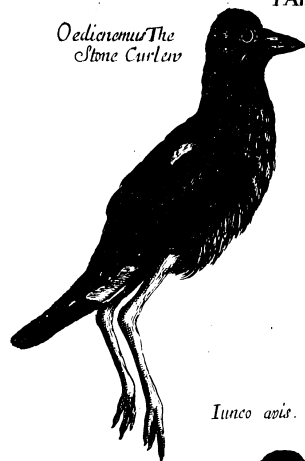
Charadrius
The Sea Lark.



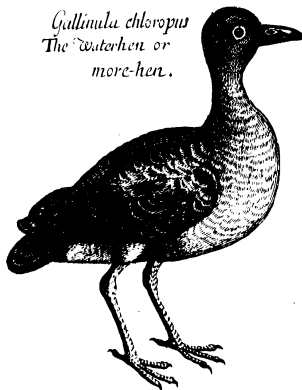
Morinellus marinus
The Sea-Dotbell.



Oediacornis The
Stone Curlew



Gallinula chloropus
The Waterhen or
more-hen.



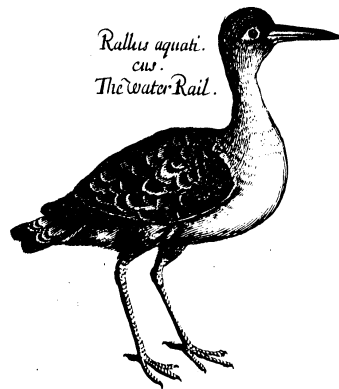
Lunco avis.



Poliopus Gallinula
minor.



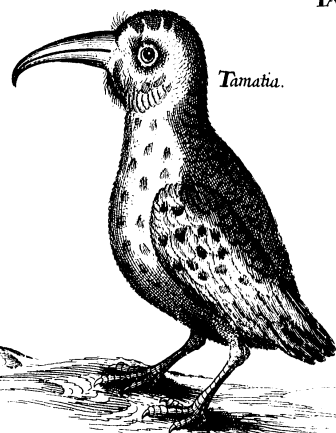
Rallus aquatilis.
The Water Rail.



Lucania.



Tamatia.



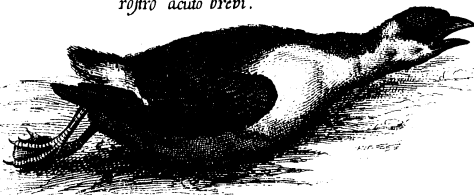
Colymbus major
The greater Loon or Diver



Fulica
The Coot.



Mergulus melanoleucos
rostr. acuto brevi.



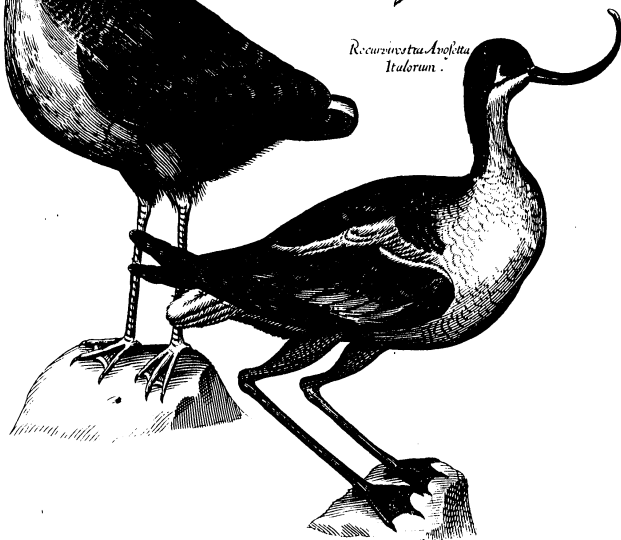
Phoenicopterus
The Flammant



Trochilus Aldrov.



Recurvirostra Asioletta
Italerum.





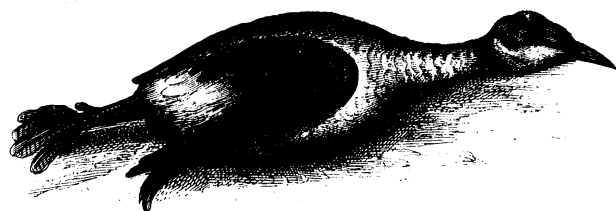
Colymbus cristatus.
The crested Diver
or Loon.



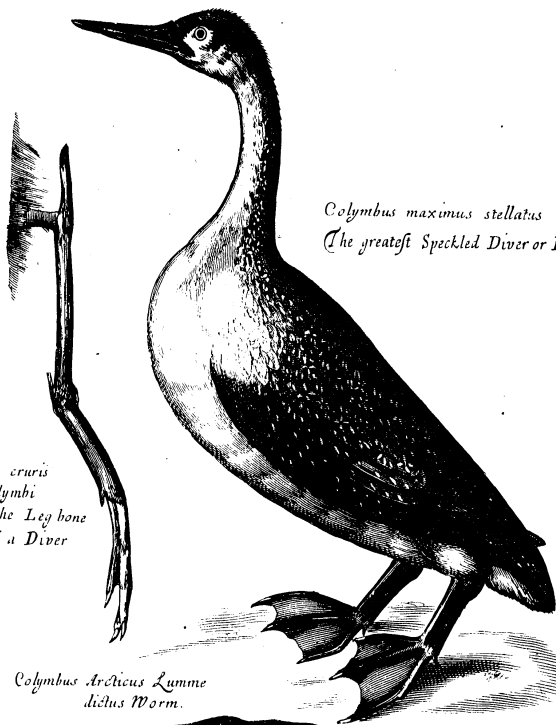
Colymbus maximus caudatus.
The greatest Loon.



Colymbus minor.
The Didapper or
Dobchick.

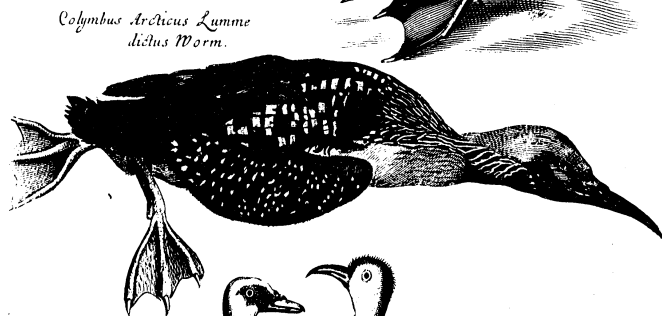


Colymbus seu Podiceps cinereus.
The ash-coloured Loon.

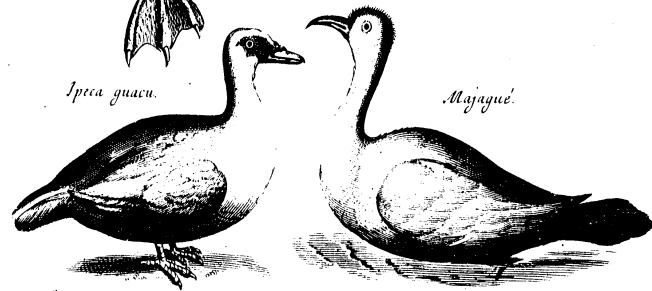


Colymbus maximus stellatus
The greatest Speckled Diver or Loon

Os cruris
Colymbi
The Leg bone
of a Diver



Colymbus arcticus Linnæ
dictus Worm.



Ipeca guacu.

Majague.

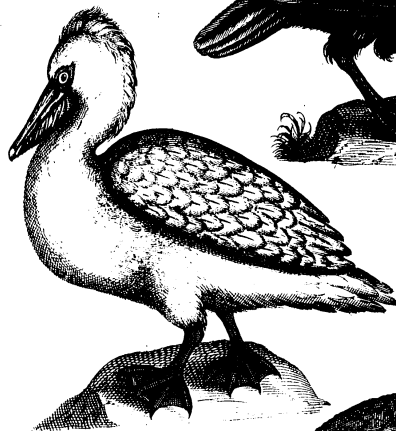
Corvus aquaticus.
The Cormorant.



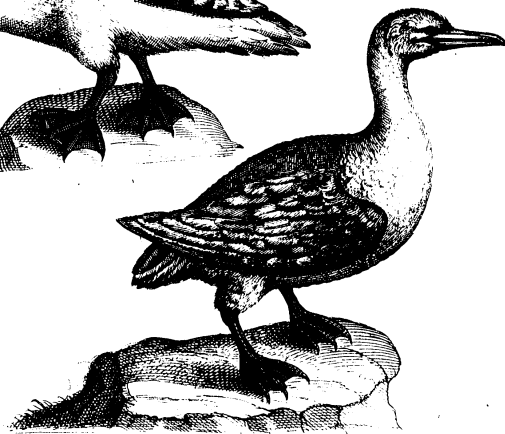
Graculus palmpes.
The Shagge.



Oncorhynchus.
The Pileane.



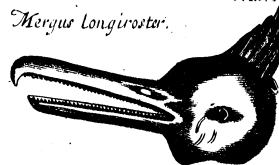
Anser Bassanus.
The Soland Goose.



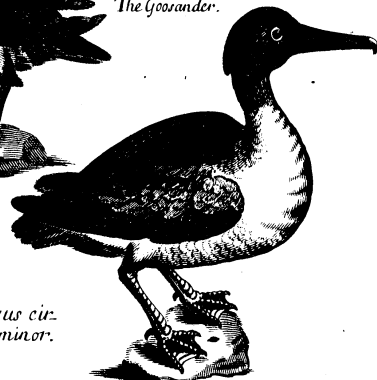
Alca Hoyeri
The Auk or Razor-
Bill



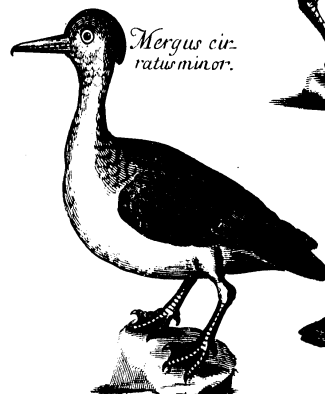
Mergus longirostris



Merganser
The Goosander.



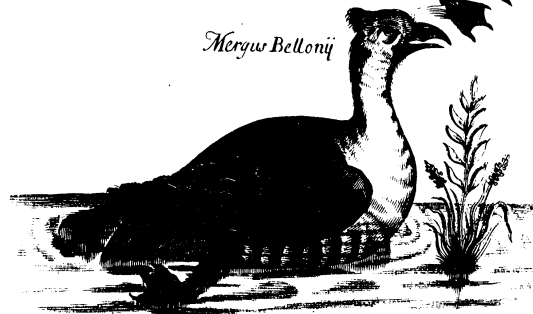
*Mergus cu-
ratus minor*

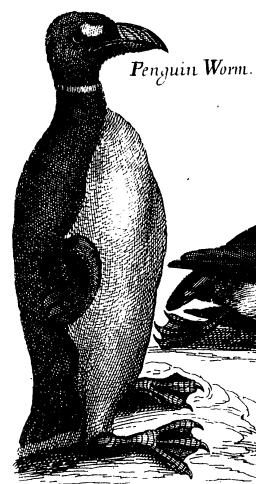


Abellus
The Snipe.



Mergus Bellonii

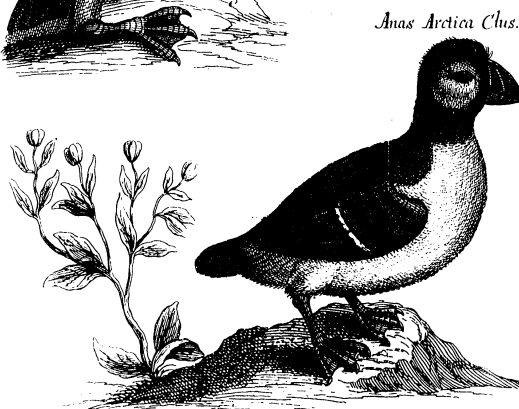




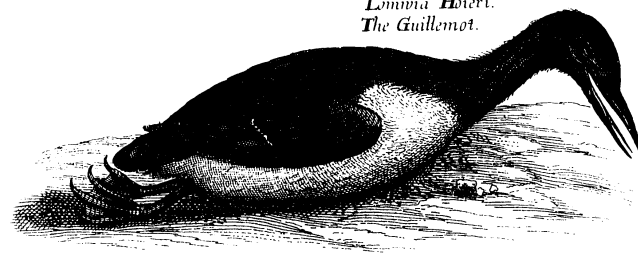
Penguin Wren.



Alca Hoiri.
The Razor-bill or Auk.

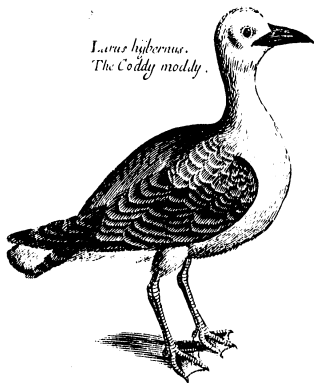


Anas Arctica Chus.

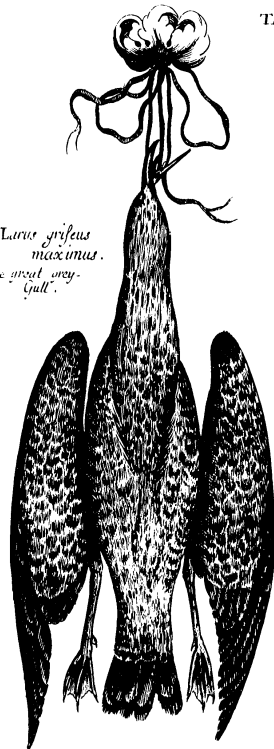


Lomvia Hoiri.
The Guillemot.

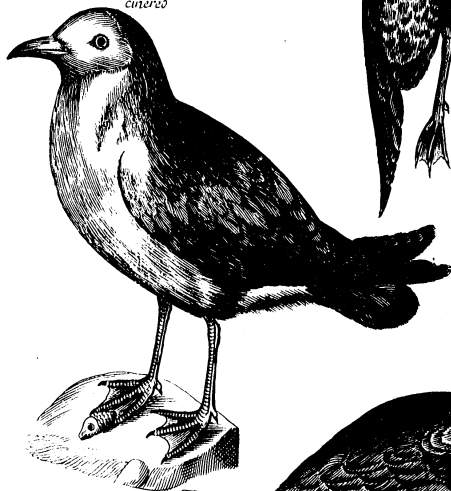
Larus hyperboreus.
The Cuddy noddy.



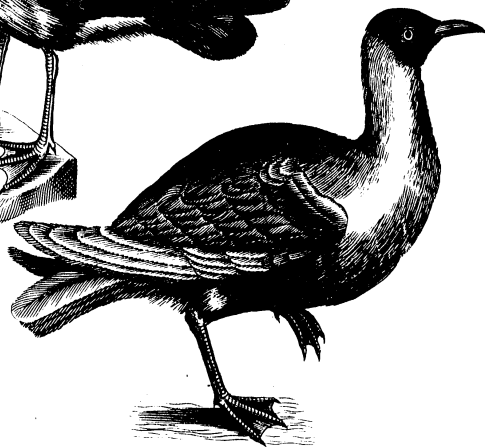
Larus griseus
maximus.
The great grey-
gull.



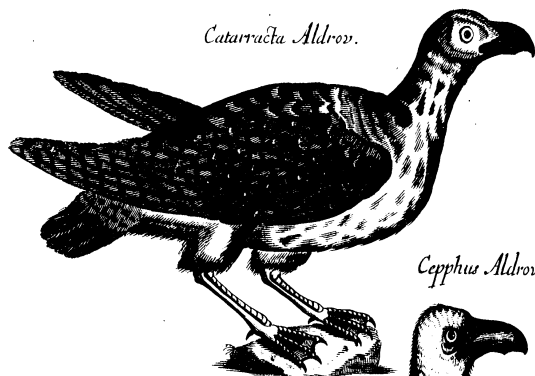
Larus albocinereus torquatus
cinereus



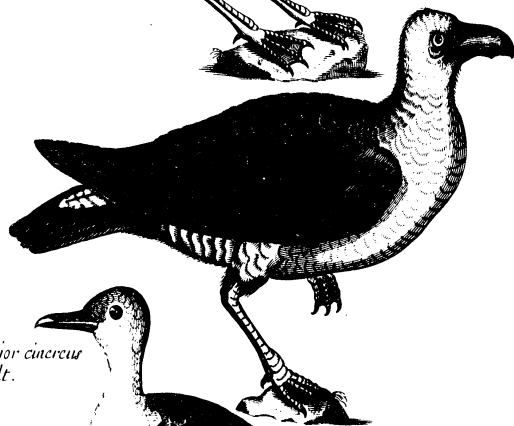
Larus cinereus rostris &
pedibus rubris The Petrel.



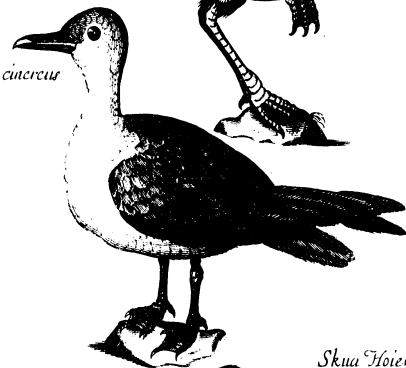
Catarracta Aldrov.



Cephus Aldrov.



*Larus major cinereus
Balt.*



Skua Hoieri.



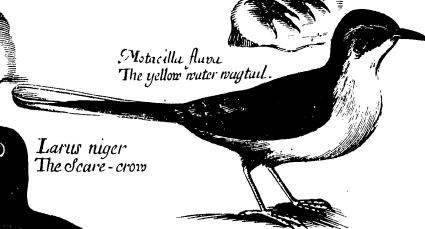
Hirundo marina major
The greater Sea Swallow



Larus nigro-cinereus
palustris.



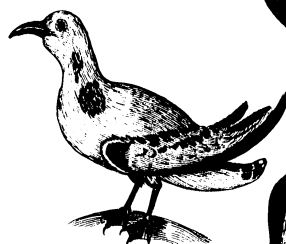
Motacilla flava
The yellow water nuthatch.



Larus niger
The black-crow



Larus cinereus Bellon.
The Tarrock.



Larus niger fi-
dipes.



Hirundo marina minor.
The Lesser Sea Swallow.



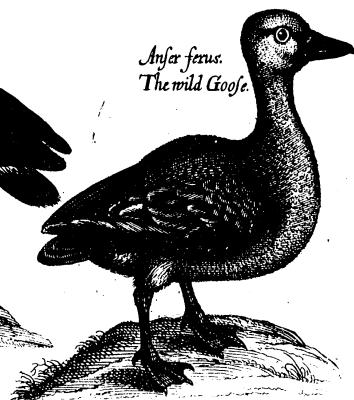


Cygnus.
The Swan.

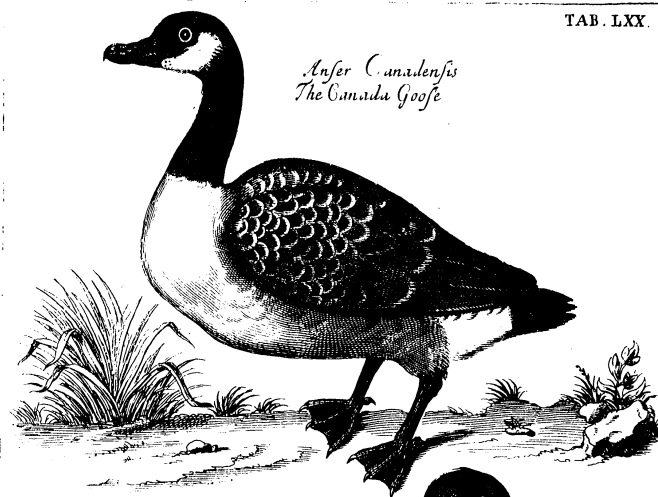
Cygni feri caput.
An Elks head.



Brenda.
The Brent-goose.



Anser ferus.
The wild Goose.



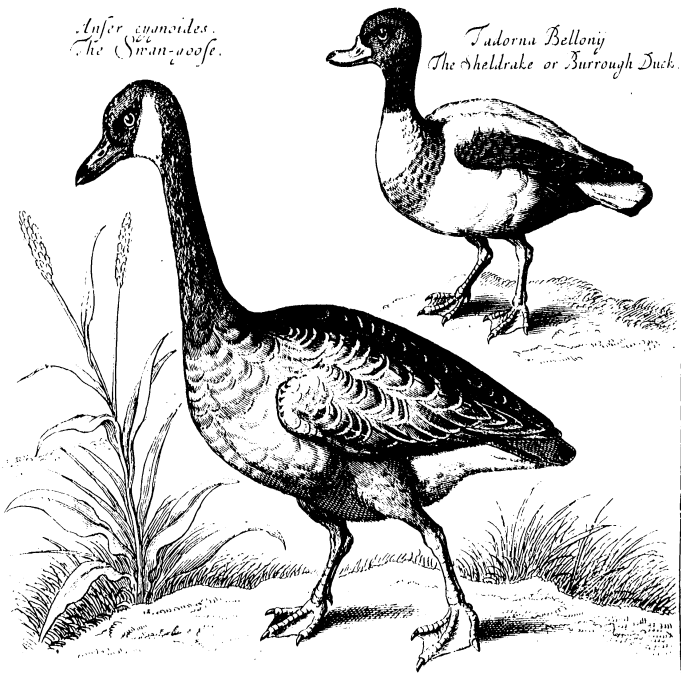
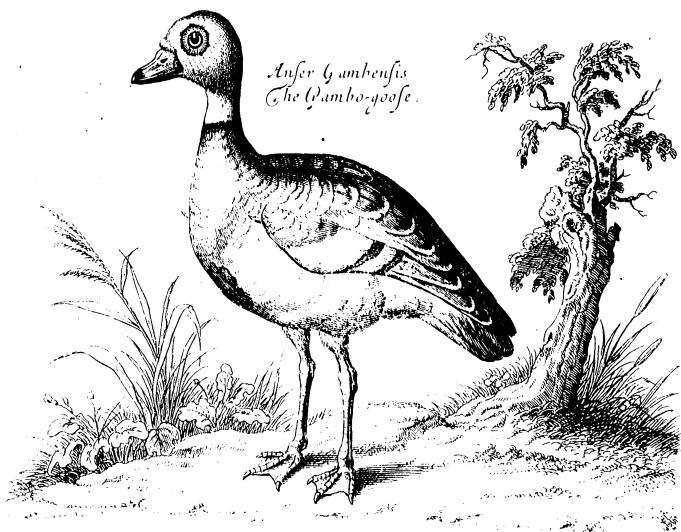
Anser Canadensis
The Canada Goose



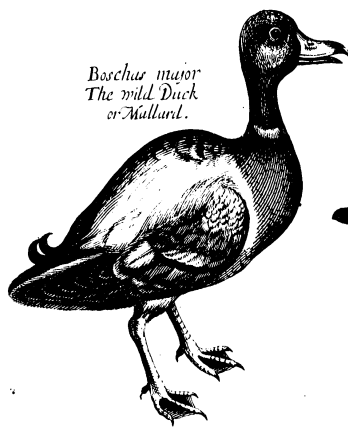
Tadorna Bellonij
The Sheldrake.



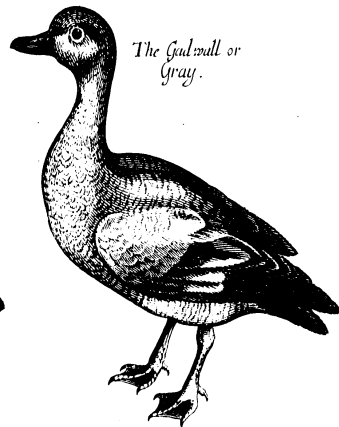
Anas niger major
The great black Duck.



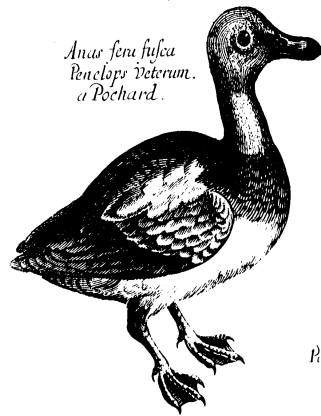
Boschas major
The wild Duck
or Mallard.



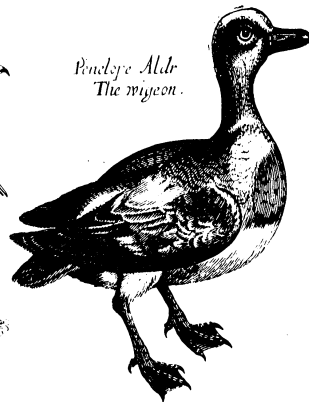
The Gadwall or
Gray.



Anas feni fusca
Penclope Veterum.
a Pochard.

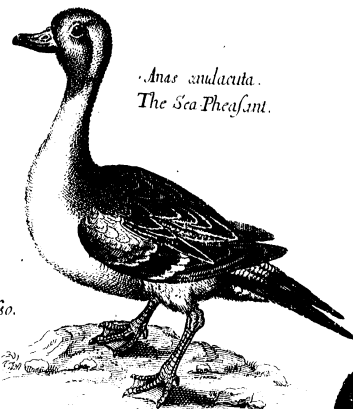


Penclope Alde
The myeon.



Anhinga Mangorav.





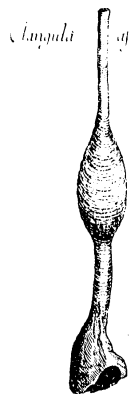
Anas undulata.
The Sea Pheasant.



Capo rosso.
Anas fereus
fusca min.



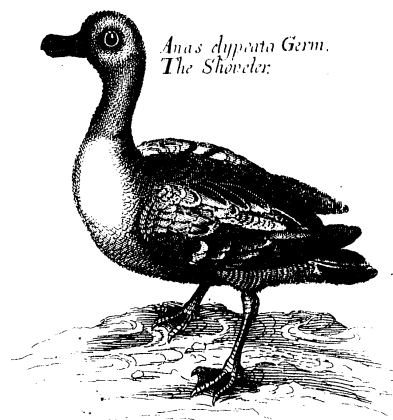
Anas Fuligula
prima Gesn.



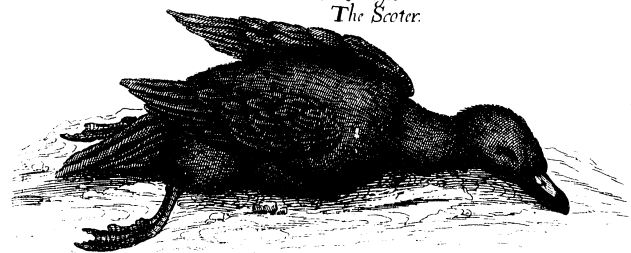
Clangula
clangula arctica.



Clangula Gesn.
The Golden eye.



Anas dyypata Germ.
The Shoveler.



Anas niger minor.
The Scoter.



Querquedula.
The Teal.

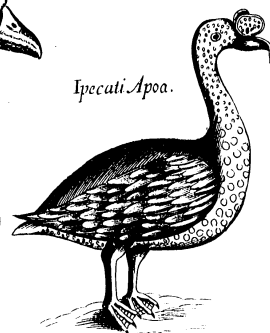


Querquedula altera.
Garganey.

Anser Domesticus
The tame Goose.



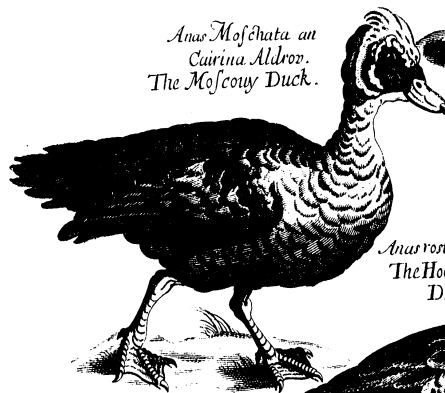
Ipecati Apoa.



Anas Domestica.
The Common tame Duck.



Anas Moschata an
Cairina Aldrov.
The Moscovy Duck.

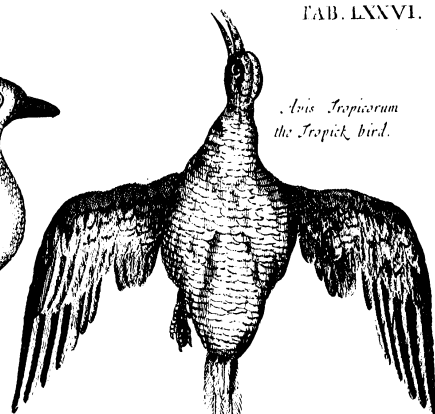


Anas rostris aduncus
The Hook-bill'd
Duck

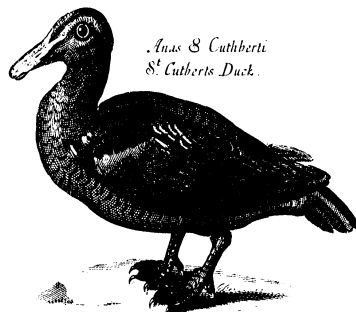




Anas circia Gesu:
the Summer Teal.

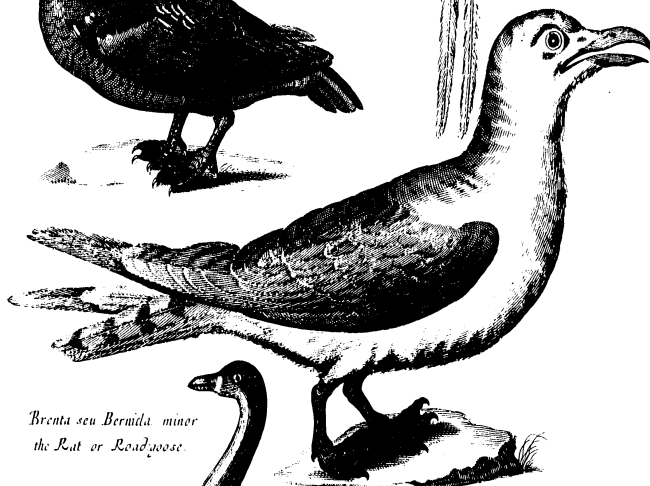


Ardea tropicorum
the Tropic bird.

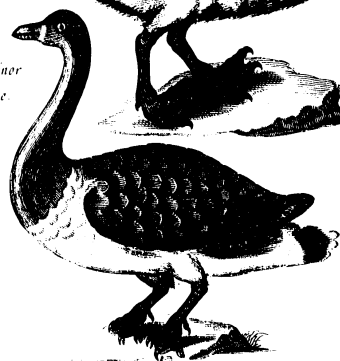


Anas 8 Cuthberti
8th Cuthberts Duck.

Larus cinereus minor
the Common sea mew
or Gull.



Brenta seu Bernia minor
the Rat or Road goose.



Cuculus Prior.
the Cuckow.



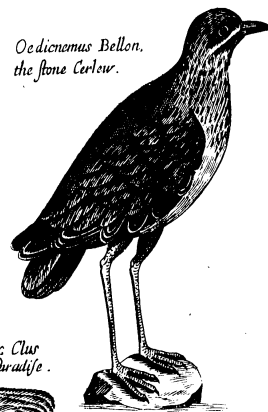
Corvus cinerea lugubris.
the Raven Crow.



Montifringilla major.
the Greater Brandling.



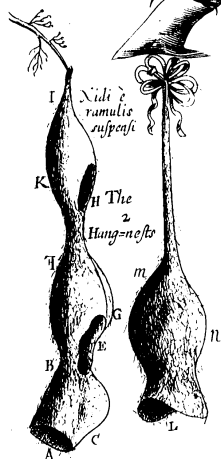
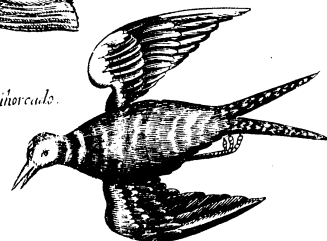
Oedienomus Bellon.
the Stone Cuckow.



Manicodonta Rex Clus.
The King of birds of Brualife.



The Rabinoreado.



TAB. LXXVIII.

Tamias Marggravij.
An American Waterhen.



Anas marma caudā forcipata.
The small-tailed
Sheldrake.



The Sheare-Water.

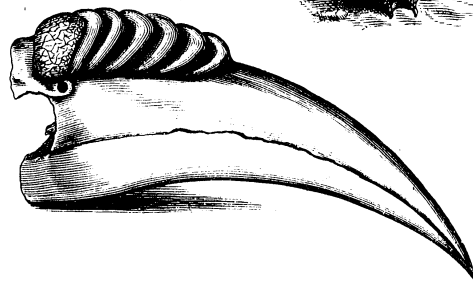


Columba Groenlandica.

The Greenland
Dove.

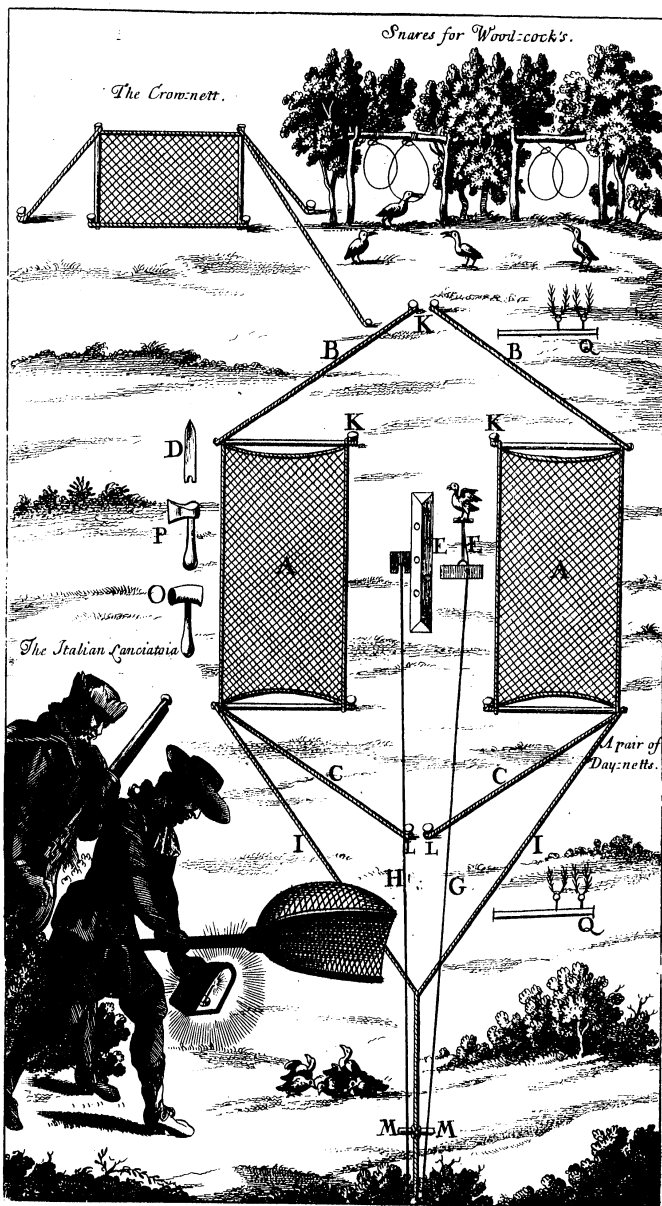
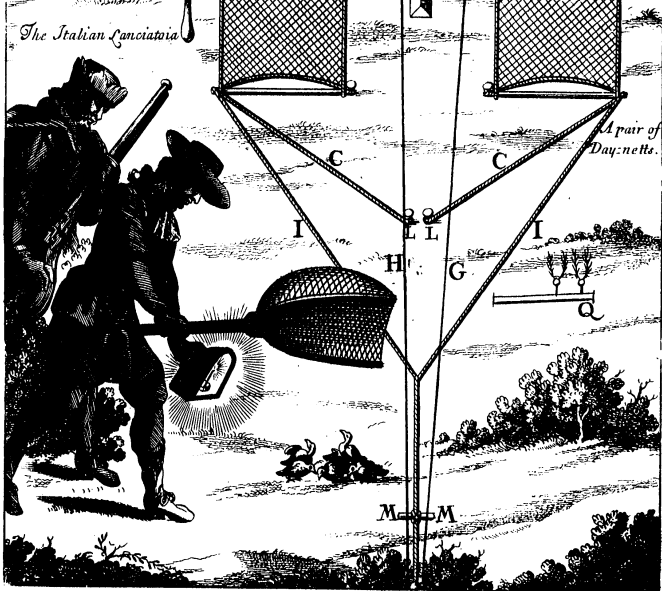
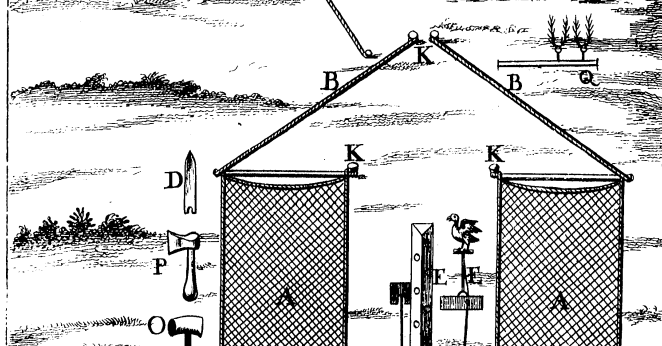
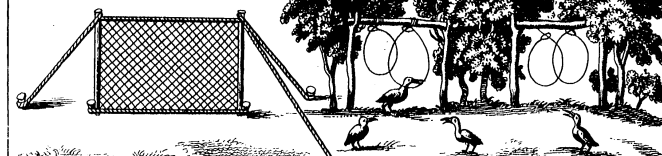


Corvi Indici rostrum.
The bill of an Indian Raven.



Snares for Wood-cock's.

The Crown-nett.





*The Explication of the Letters added to the Figure of the
Day-Nets.*

- A A Shewsthe bodies of the main Nets, and how they ought to be laid.
B B The tail-lines or hinder-lines stak'd to the earth.
C C The fore-lines likewise stak'd to the earth.
D The Knitting-needle.
E The Bird-stake.
F The Looking-glass-stake.
G The Linethat draws the Bird-stake.
H The Line which draws the Glass-stake.
I I The drawing double Lines of the Nets, which pull them over, twelve fathom
long at least, but not double above two fathom.
K K K K The stakes which stake down the four nether points of the Nets, and the
two Tail Lines.
L L The stakes which stake down the fore-lines.
M The single Line with the wooden Button to pull the Net over with.
O The Mallet of wood.
P The Hatchet.
Q Q The Giggs.

Place this before Page 29.